



*Environmental Engineering, Civil Engineering
Forensic Engineering, Construction Services*

**ADMINISTRATIVE CONSENT ORDER
PROGRESS REPORT
JANUARY 2018**

**Former United Shoe Machinery Division North Parcel
181 Elliott Street
Beverly, MA 01915**

Prepared for:

Cummings Properties, LLC
200 West Cummings Park
Woburn, MA 01801

Prepared by:

FSL Associates, Inc.
358 Chestnut Hill Avenue
Boston, MA 02135

February 13, 2018

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1.0 INTRODUCTION

This Progress Report was prepared in order to detail the field and sampling activities associated with the former United Shoe Machinery (USM) Division North Parcel at 181 Elliott Street in Beverly, Massachusetts (also referred to as the "Site"). Actions completed in this report relate to the approved Written Proposal/Sampling and Analysis Plan Revision 2 ("SAP") for the Site dated September 29, 2017 and the Elliott Landing SAP Revision 4 dated September 29, 2017 ("Elliott Landing SAP"). Refer to the attached **Figure 1** for the site locus and **Figure 2** for the site plan.

This Site has been identified in the RCRA 2020 Corrective Action Universe list established by the United States Environmental Protection Agency (EPA). By the year 2020, EPA and the authorized states plan to have largely completed the work of implementing final remedies at all facilities requiring Corrective Action. This Site is listed under site number MAD 043415991 as USM Machinery Division. As part of the RCRA 2020 program, EPA is overseeing an audit of the historical remedial actions conducted at the property by the property owner. EPA Region 1 has been working with the owner's representative, Cummings Properties, LLC, on this site since 2009, and in EPA's opinion, more sampling data is needed to, among other things, understand whether vapor intrusion may be impacting indoor air quality and posing a threat to human health.

Following an EPA audit and review of existing sampling data, EPA requires further examination to determine:

- whether vapor intrusion is occurring at the locations identified by EPA, including but not limited to, buildings 100, 500, and 600;
- whether contamination exists in the Shoe Ponds that presents ecological risks to aquatic life;
- whether all underground storage tanks have been removed or properly abandoned, if there are releases to the environment from the tanks and the nature and extent of any migration of contamination from existing tanks;
- whether residual polychlorinated biphenyl (PCB) contamination exists on the fourth floor of Building 100 (formerly occupied by the North Shore Regional Vocational School) in or proximate to the former machine shop and any other area on-site where PCBs were used/managed/released and/or identified as a contaminant of concern;

- whether the PCB disposal areas (former chip grind shed and former ballfield area) meet the requirement of 40 CFR § 761.61 and the January 9, 1997 approval letter from EPA, including but not necessarily limited to the following:
 - (1) required protective cover,
 - (2) required cover maintenance,
 - (3) required AUL documentation, and
 - (4) appropriate documentation to verify that stabilized PCB contaminated soils were placed at least one foot above the high water table so that no migration of PCBs to groundwater is occurring.

These requirements were set forth in an Administrative Consent Order (ACO) between EPA and Cummings Properties, LLC with an effective date of April 13, 2017.

Specifically, this report documents actions that have taken place in January 2018 in furtherance of the work required in the ACO. Such actions have included the first round of sampling and analysis of groundwater from selected Site wells (wells related to the vapor intrusion assessment), and the first round of sampling and analysis of soil gas and indoor air from the previously designated Site interior building locations. Work was done in accordance with the SAP and the Elliott Landing SAP updated September 29, 2017.

2.0 JANUARY 2018 GROUNDWATER SAMPLING AND ANALYSIS

In accordance with the SAP and Elliott Landing SAP, groundwater sampling and analysis from selected site wells related to potential vapor intrusion was performed in January 2018. Specific wells identified in the SAPs included wells FSL-2, FSL-8, FSL-9, FSL-10, FSL-11, FSL-12, FSL-100, FSL-200, and FSL-300. Analysis parameters as defined in the SAPs varied per well, but included extractable petroleum hydrocarbons / polycyclic aromatic hydrocarbons (EPH/PAH), volatile petroleum hydrocarbons (VPH), and volatile organic compounds (VOCs). Refer to **Figure 2** for the site plan showing the locations of the groundwater monitoring wells.

Sampling was conducted on January 15, 2018 by FSL and EST Associates, Inc. Prior to sampling, the wells were sounded for depth to water, the presence of nonaqueous phase liquid (NAPL), and total well depth from the top of the casing. The groundwater wells were purged and sampled using low-flow sampling protocols. During purging, field parameters (pH, temperature, electrical conductivity, oxidation-reduction potential, dissolved oxygen, and turbidity) were collected and recorded on sampling logs. Samples were collected after the parameters had stabilized. The results of the field parameters and individual well sampling records are included in **Appendix A**. Well FSL-2 could not be sampled as it ran dry during purging and did not recharge for sample collection. Groundwater field duplicates were collected at wells FSL-12 and FSL-100.

The results of the groundwater laboratory analysis are shown in **Table 1** and the full laboratory analytical report is included in **Appendix B**. In summary, no VOCs were detected except for trace concentrations of acetone in wells FSL-11 and FSL-12. VPH and VPH indicator compounds were not detected in any sample. Trace EPH fractions were detected only in well FSL-300 and trace PAHs (naphthalene, acenaphthene, and phenanthrene) were detected only in well FSL-8. All detected concentrations were well below the most conservative nondrinking water regulatory action levels.

3.0 JANUARY 2018 SOIL GAS AND INDOOR AIR SAMPLING AND ANALYSIS

In accordance with the SAP and Elliott Landing SAP, soil gas and indoor air sampling and analysis was performed in January 2018. Specific locations for sampling included:

- Aspire Learning Center
100 Cummings Center, S-135
- Bright Horizons Children's Center
100 Cummings Center, S-149-J
- Former Futures Behavior Therapy Center
100 Cummings Center, S-157-J
- Former New England Academy
500 Cummings Center, Former S-1100
- Beverly Children's Learning Center
600 Cummings Center, S-171-X
- Elliott Landing

Soil gas was collected in all 6 locations above. Indoor air samples were collected in all locations except Elliott Landing, in accordance with the Elliott Landing SAP. Refer to **Figures 3-8** for the site plan showing the specific locations of the soil gas and indoor air sampling points.

3.1 Soil Gas Sample Collection

For each of the soil gas points installed (see **Figures 3-8**), a single air sample was collected. Samples were collected by FSL using a 2.7-liter canister for the purposes of collecting a 30-minute composite. Canisters and regulators were provided by Alpha Analytical of Mansfield, MA. One canister was placed in each of the sampling locations as described above. Separate canisters as field duplicates were also collected in Building 100 Suite S-135-C and Suite S-157-J, and at Elliott Landing. Soil gas sampling was performed on January 14-15, 2018. Two of the planned soil gas samples in Building 100 Suite S-157-J were not collected. Sample point SG-1 (installed along with the other soil gas points in this suite in 2015) was found to have been destroyed. In addition, due to a canister malfunction, a sample from point SG-2 was not collected.

Details on the sampling canisters are provided in **Appendix C**. The canisters were received by Alpha Analytical on January 16, 2018 under a chain of custody. Samples were requested for analysis for the following parameters:

- Air-Phase Petroleum Hydrocarbons (APH)
- (VOCs) using EPA Method TO-15

Sample analysis was requested to be performed in the SIM mode to obtain the lowest achievable (most conservative) detection limits. In accordance with the APH analytical method, the potential identification of non-APH compounds (such as chlorinated solvents, ketones, and ethers) may represent an interference with the quantitative response within the aliphatic or aromatic hydrocarbon range. A specific request was made for non-APH compounds to be identified in the laboratory report form or narrative, such that the data may be evaluated for such potential interference. Due to a field error in the chain of custody, the soil gas sample collected in Building 500 identified as SV-3 was not included on the chain of custody. Although this canister was received by the laboratory, analysis of the sample was not performed.

The results of the soil gas laboratory analysis are shown in **Table 2** and the full laboratory analytical report is included in **Appendix D**. In **Table 2**, the soil gas results are directly compared to the residential sub-slab soil gas screening levels from the Massachusetts Department of Environmental Protection (MassDEP) Vapor Intrusion Guidance Policy WSC# 16-435 (October 2016). In summary, the only exceedances of these screening values were for naphthalene at samples SG-3 (Building 100 Suite S-157-J) and SG-3 (Elliott Landing), and for trichloroethene (TCE) in sample SV-6 (Building 100 Suite S-135-C). Whereas vapor intrusion is not likely occurring when contaminant values are below the screening standards, the converse is not necessarily true. Exceedance of screening levels may mean vapor intrusion is occurring, but additional seasonal sampling events are necessary to verify this fact.

3.2 Indoor Air Sample Collection

For each of the noted indoor air sample locations (see **Figures 3-7**), a single air sample was collected. Samples were collected by FSL using a 6-liter canister for the purposes of collecting a 24 hour composite. Canisters and regulators were provided by Alpha Analytical of Mansfield, MA. One canister was placed in each of the sampling locations as described above. Separate canisters as field duplicates were also collected in Building 100 Suite S-135-C and Building 600 Suite S-171-X. Indoor air sampling was performed on January 13-14, 2018.

Details on the sampling canisters are provided in **Appendix C**. The canisters were received by Alpha Analytical on January 16, 2018 under a chain of custody. Samples were requested for analysis for the following parameters:

- Air-Phase Petroleum Hydrocarbons (APH)
- (VOCs) using EPA Method TO-15

Sample analysis was requested to be performed in the SIM mode to obtain the lowest achievable (most conservative) detection limits. As with the soil gas analysis, the potential identification of non-APH compounds (such as chlorinated solvents, ketones, and ethers) may represent an interference with the quantitative response within the aliphatic or aromatic hydrocarbon range. A specific request was made for non-APH compounds to be identified in the laboratory report form or narrative, such that the data may be evaluated for such potential interference.

The results of the indoor air laboratory analysis are shown in **Table 3** and the full laboratory analytical report is included in **Appendix D**. In **Table 3**, the indoor air results are directly compared to the residential threshold values from the MassDEP Vapor Intrusion Guidance Policy WSC# 16-435 (October 2016 and the EPA Target Risk values (carcinogenic = 1E-06 or Hazard Index = 0.1; from the Regional Screening Level Resident Ambient Air Supporting Table updated November 2017). In summary, the detected compounds that exceeded one or both of the screening/threshold values in at least one sample included 1,2-dichloroethane (1,2-DCA), 2-butanone, benzene, carbon tetrachloride, chloroform, chloromethane, isopropanol, methylene chloride, naphthalene, styrene, and the petroleum hydrocarbon fractions C₅-C₈ aliphatics and C₉-C₁₂ aliphatics. Whereas vapor intrusion is not likely occurring when contaminant values are below the screening or threshold values, the converse is not necessarily true. Exceedance of screening levels may mean vapor intrusion is occurring, but additional seasonal sampling events are necessary to verify this fact. Also, the following compounds were not detected but their analytical detection limits were greater than the residential screening/threshold values: 1,1,2,2-tetrachloroethane, 1,2-dibromoethane, benzyl chloride, hexachlorobutadiene, and vinyl bromide.

For the individual site areas, below is a summary of the compounds in indoor air exceeded one or both of the screening/threshold values in at least one sample.

Building 100 Suite 135-C: 1,2-DCA, benzene, carbon tetrachloride, chloroform, isopropanol, naphthalene, styrene, C₅-C₈ aliphatics, and C₉-C₁₂ aliphatics.

Building 100 Suite 149-J: 1,2-DCA, benzene, carbon tetrachloride, chloroform, isopropanol, and methylene chloride.

Building 100 Suite 157-J: benzene, carbon tetrachloride, chloroform, isopropanol, and C₅-C₈ aliphatics.

Building 500 Former Suite 1100: 1,2-DCA, 2-butanone, benzene, carbon tetrachloride, chloroform, isopropanol, naphthalene, C₅-C₈ aliphatics, and C₉-C₁₂ aliphatics.

Building 600 Suite 171-X: carbon tetrachloride, chloroform, and naphthalene.

3.3 Meteorological Data During Sample Collection

The following weather conditions were observed from the weather station at the Beverly Municipal Airport during the days of sample collection:

Date	Mean Temperature (°F)	Mean Sea Level Pressure (Inches)	Mean Wind Speed (Miles Per Hour)	Precipitation (Inches)
1/13/2018	40	29.66	15	0.45
1/14/2018	18	30.54	12	0.00
1/15/2018	16	30.64	10	0.00

4.0 EVALUATION OF ANALYTICAL AND SITE DATA COLLECTED FOR THIS PROGRESS REPORT

The primary purpose for the data presented in this Progress Report is the evaluation of potential vapor intrusion at the Site. Accordingly, the groundwater, soil gas, and indoor air data corresponding to the same Site locations were compared. This comparison was to see if there was a trend for contaminants to travel from groundwater and/or soil gas to the indoor air space. For vapor intrusion to be present compounds must be detected at least in both indoor air and in soil gas. In addition, for vapor intrusion to be present, the concentrations of contaminants in indoor air cannot exceed (or be in the same order of magnitude as) the concentrations in soil gas. Otherwise, the presence of indoor air contaminants would primarily be due to other circumstances, such as indoor air sources or outdoor ambient air contaminants impacting interior building spaces.

A comparison of the data for each space is shown in **Table 4**. There is a separate comparison for each of the six different Site areas evaluated. Groundwater data, where available, are included in the comparison. The results for well FSL-8 are applicable to Building 100 Suite 149-J. The results for well FSL-9 are applicable to Building 100 Suite 157-J. The results of wells FSL-11 and FSL-12 are applicable to Building 500. The results of wells FSL-10 and FSL-12 are applicable to Building 600 Suite 171-X. The results of wells FSL-100, FSL-200, and FSL-300 are applicable to Elliott Landing. In **Table 4**, a range for each detected contaminant is shown for soil gas, indoor air, and groundwater along with a determination if the evidence suggests potential vapor intrusion.

As shown in **Table 4**, with the possible exception of naphthalene in Elliott Landing, there is no evidence of potential vapor intrusion in the sampled building areas. These conclusions are based on the following:

- Individual detected compounds in a specific space were either detected only in soil gas or only in indoor air;
- Individual detected compounds in a specific space were detected at a significantly higher concentration in indoor air than in soil gas; or
- Individual detected compounds in a specific space were detected in both indoor air and soil gas at the same order of concentration magnitude.

The possible exception to this is at Elliott Landing, where a single soil gas sample (SG-3) had an elevated level of naphthalene present relative to the other soil gas samples collected in that area. Naphthalene was not detected in the groundwater near Elliott Landing, so there is no evidence suggesting vapor intrusion is present. However, this data point represents an anomaly that will require further assessment and evaluation.

Note that this data comparison is not related to the potential health risk of any of the individual compounds, but to the transport mechanism of vapor intrusion from the subsurface to the building indoor air. Based on this sampling round, the overall initial conclusion is that there is no evidence of vapor intrusion at the Site.

None of the detected constituents in indoor air or groundwater are at concentrations that represent an Imminent Hazard condition, so no immediate actions are necessary. The next sampling event for vapor intrusion will occur in April 2018.

5.0 NEXT SCHEDULED ASSESSMENT ACTIVITIES

In accordance with the Site SAP and the Elliott Landing SAP, the next sampling is scheduled in March 2018 for groundwater wells related to historical groundwater contamination and in April 2018 for vapor intrusion evaluation. The results from the March 2018 sampling will be included in a Progress Report to be submitted to EPA in April 2018; the results from the April 2018 sampling will be included in a Progress Report submitted in May 2018.

FIGURES

Figure 1 – Locus Plan

Figure 2 – Site Plan

Figure 3 – Soil Gas and Indoor Air Sampling Locations – 100 Cummings Center (S-135-C)

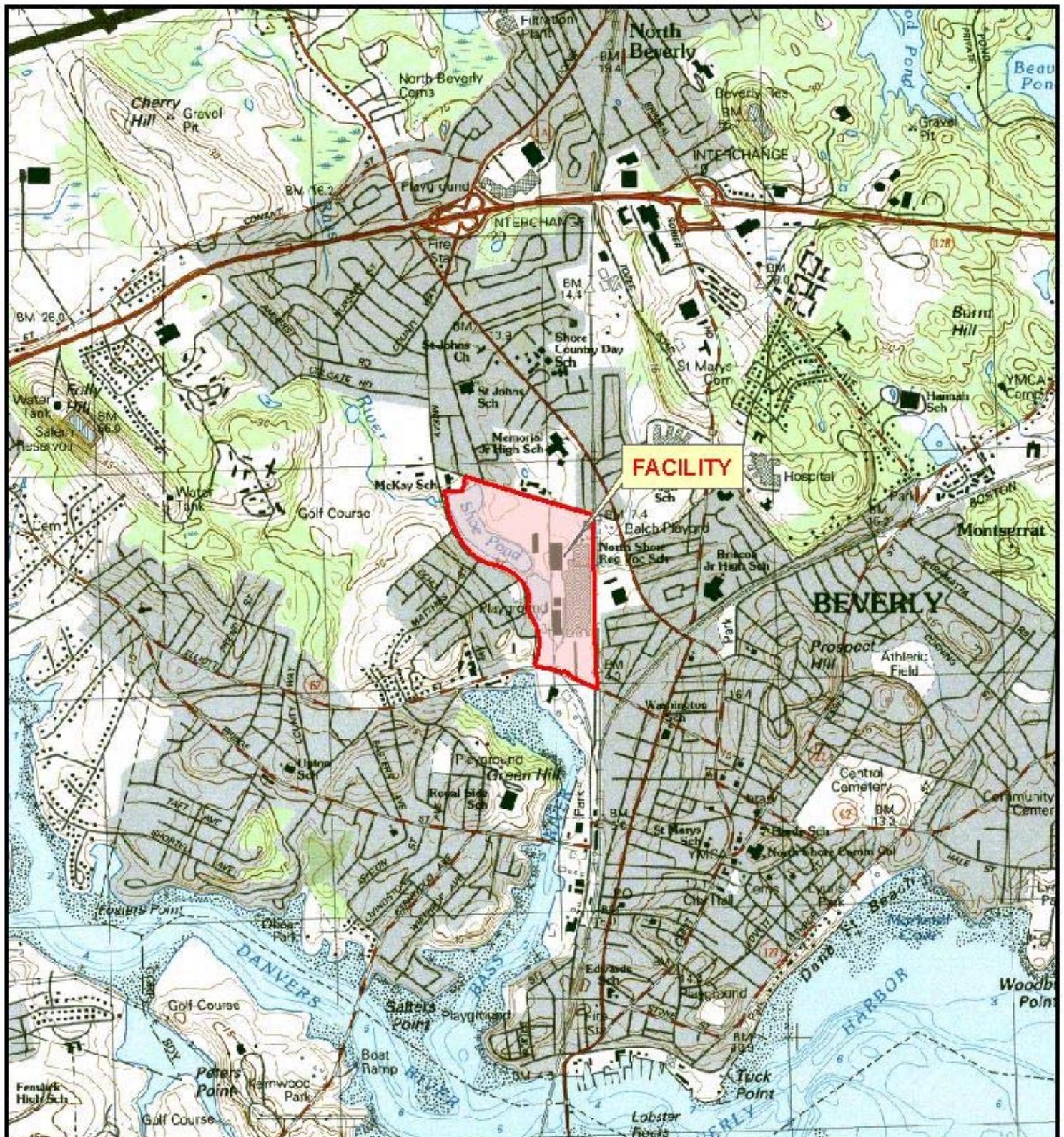
Figure 4 – Soil Gas and Indoor Air Sampling Locations – 100 Cummings Center (S-149-J)

Figure 5 – Soil Gas and Indoor Air Sampling Locations – 500 Cummings Center (Units 1050, 1350, and Unit 1450)

Figure 6 – Soil Gas and Indoor Air Sampling Locations – 600 Cummings Center (S-171-X)

Figure 7 – Soil Gas and Indoor Air Sampling Locations – 100 Cummings Center (S-149-J)

Figure 8 – Groundwater Monitoring Wells and Soil Gas Sampling Points – Elliott Landing



SITE COORDINATES
 Longitude: -70.8871 W
 Latitude: 42.5596 N
 UTM 4,713,634m N
 345,086m E

Approximate Scale: 1 inch = 2,000 feet (1:24,000)
 0 1,000 2,000 4,000 6,000
 Feet

Figure 1 - Locus Plan

Project Number: 12201
 Client: Cummings

Created By: EAF Date: 03/15/12
 Checked By: BH Date: 03/15/12

Former United Shoe Machinery North Parcel
 181 Elliott Street
 Beverly, MA

Reference: MassGIS USGS Quadrangle: SALEM and MARBLEHEAD NORTH
 Image: M12201_Beverly/2012/Figures



Figure 2 - Site Plan



FORMER UNITED SHOE
MACHINERY NORTH PARCEL
181 ELLIOTT STREET
BEVERLY MA

LEGEND

STABILIZED SOIL DISPOSAL AREA

TANKS

FSL Well Installed
11/06/17 to 11/13/17

Historic Phase II
Well

NORTH



Environmental Engineering
& Site Remediation

358 CHESTNUT HILL AVENUE
BOSTON MASS 02135
(617) 233-0001

NOTE:
Locations taken from Haley & Aldrich Plan
Dated October 30, 1997.

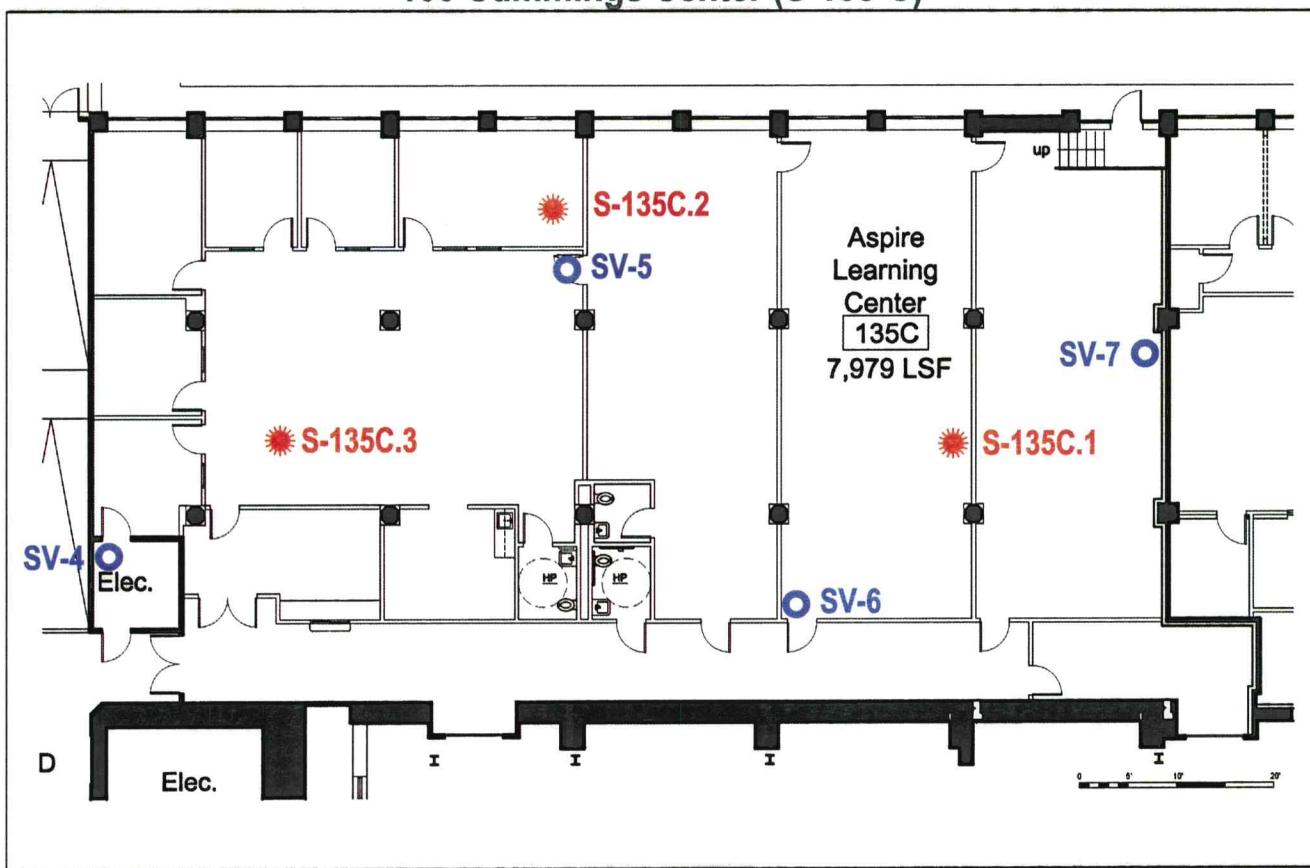
SCALE: 1'=125' +/−

DRAWN: JRC

CHK'D: BAH

DATE: 11/13/17

Figure 3
Soil Gas and Indoor Air Sampling Locations
Aspire Learning Center
100 Cummings Center (S-135-C)



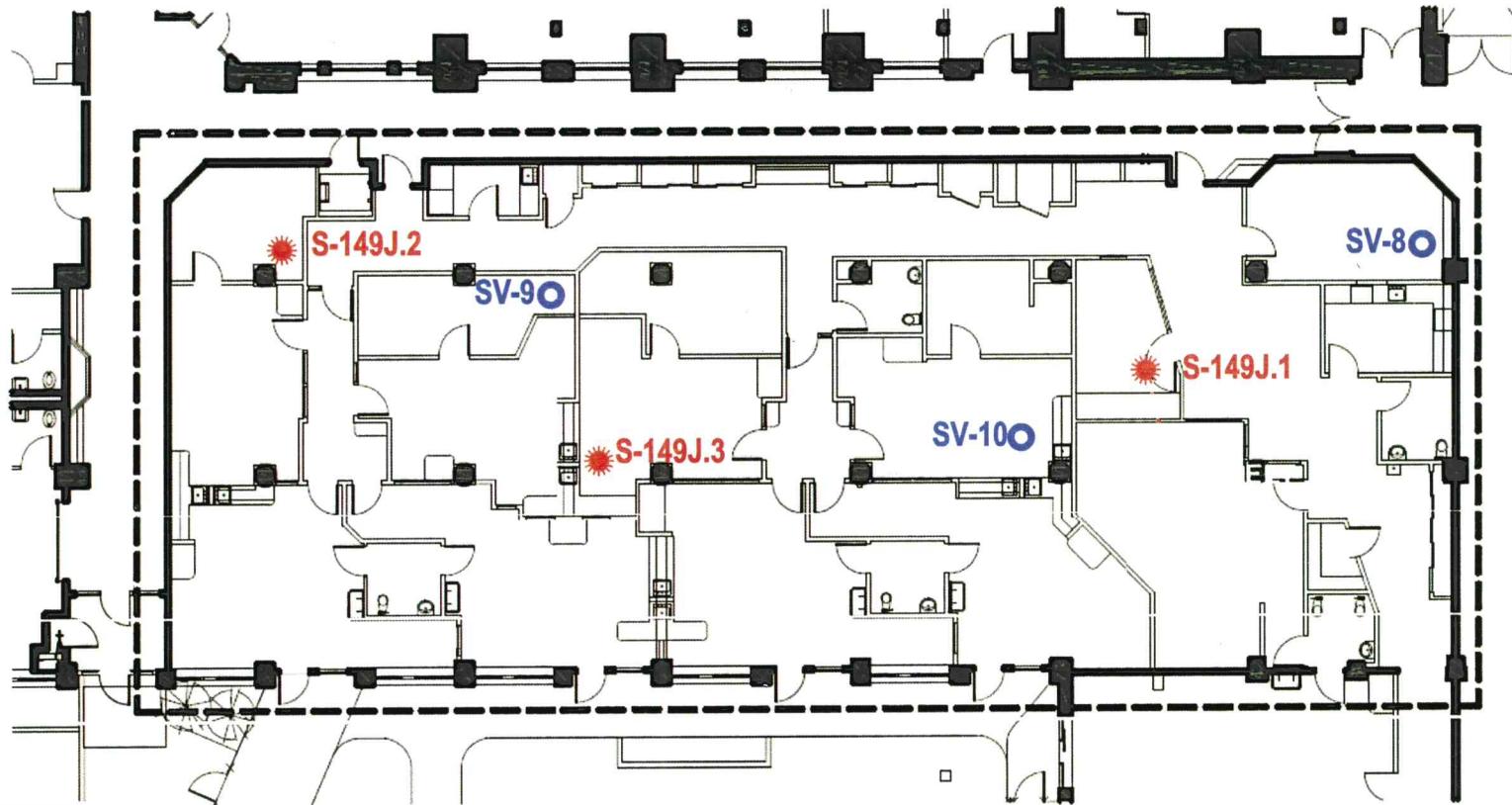
358 Chestnut Hill Ave
Boston MA 02135
(617) 232-0001

● Soil Gas Point Installed on 11/14/17

● Indoor Air Sample

Figure 4
Soil Gas and Indoor Air Sampling Locations

**Bright Horizons Children's Center
100 Cummings Center
(S-149-J)**



358 Chestnut Hill Ave
Boston MA 02135
(617) 232-0001

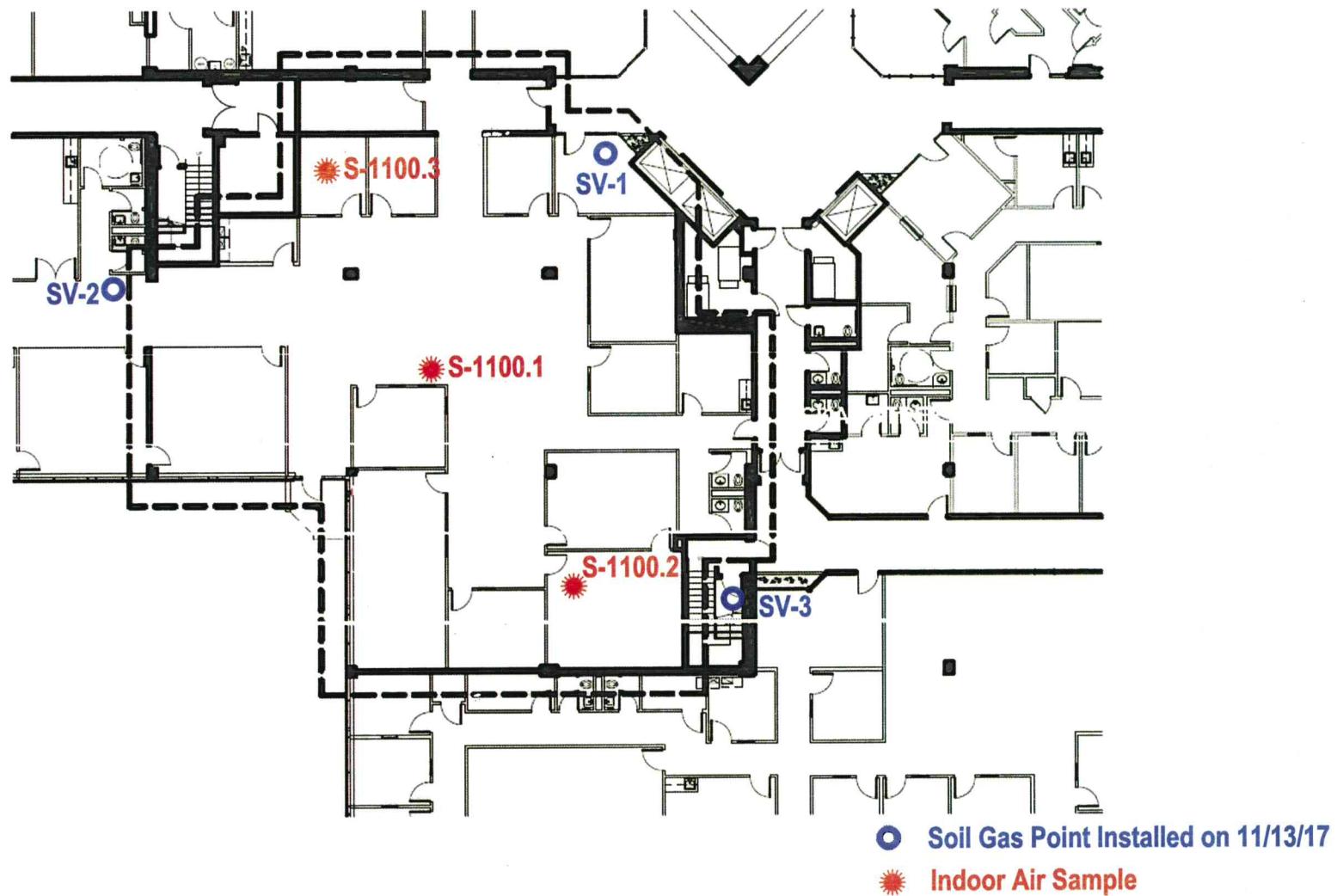
Project Number: 12201
Client: Cummings
Created By: AF Date: 11/7/12
Checked By: BAH Date: 11/8/2012

0 5' 10' 20' 40'

- Soil Gas Point Installed on 11/14/17 and 11/15/17
- Indoor Air Sample

Reference:
Cummings Properties,
Engineering Plans, 02/25/08

Figure 5
Soil Gas and Indoor Air Sampling Locations
Units 1050, 1350 and 1450 - 500 Cummings Center



358 Chestnut Hill Ave
Boston MA 02135
(617) 232-0001

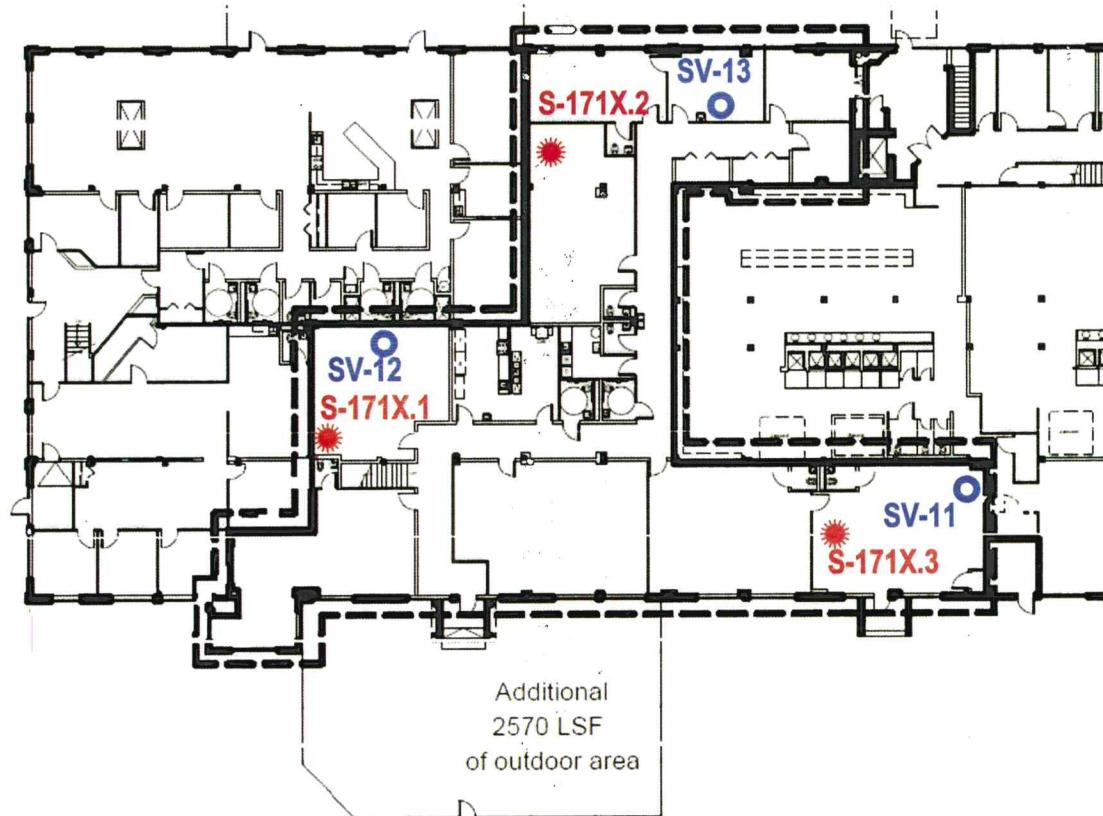
Project Number: 12201
Client: Cummings

Created By: AF Date: 11/7/12
Checked By: BAH Date: 11/8/2012

0 5' 10' 20' 40'

Reference:
Cummings Properties,
Engineering Plans, 01/11/08

Figure 6
Soil Gas and Indoor Air Sampling Locations
Beverly Children's Learning Center
600 Cummings Center
(S-171-X)



- Soil Gas Point Installed on 11/15/17
- Indoor Air Sample



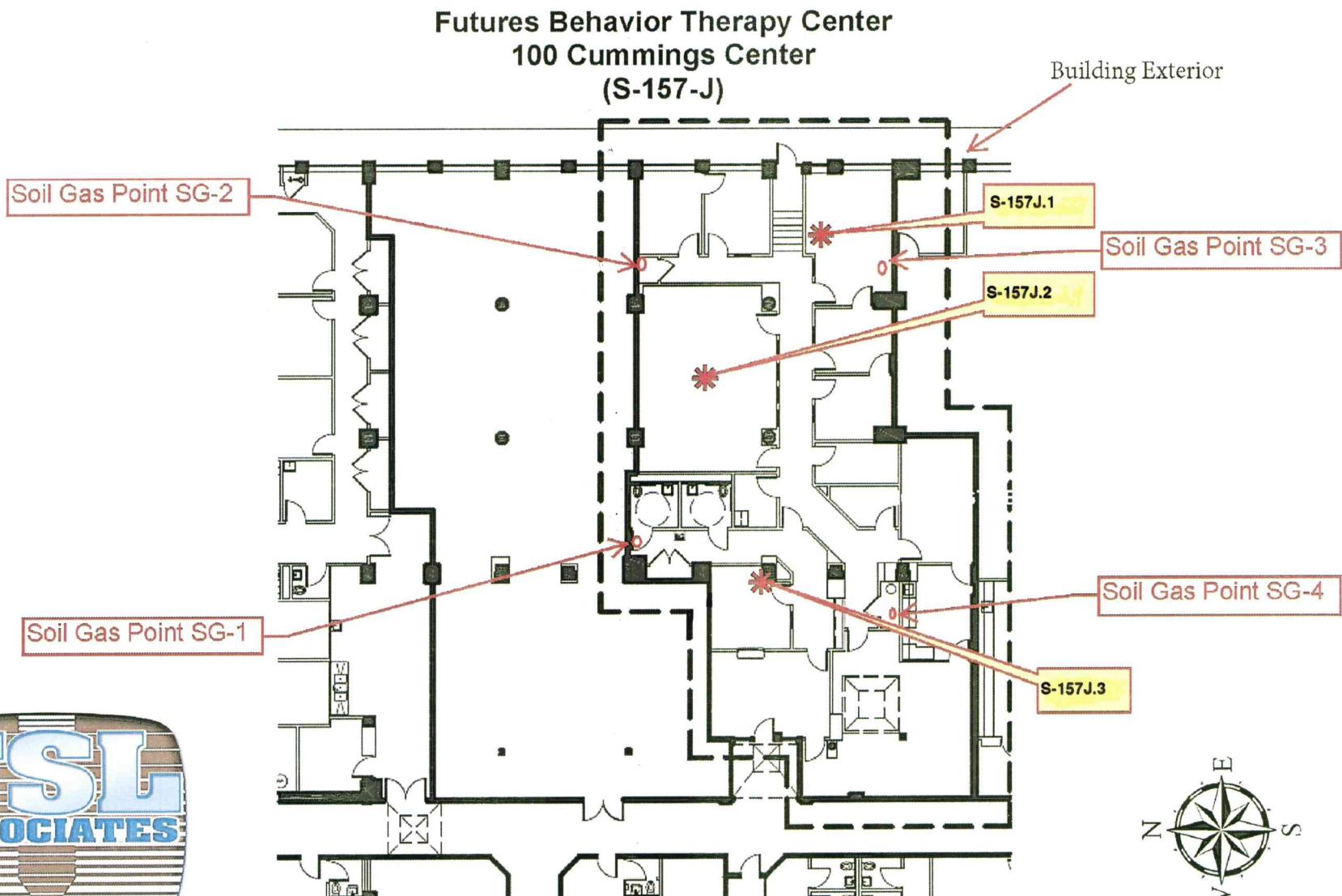
358 Chestnut Hill Ave
 Boston MA 02135
 (617) 232-0001

Project Number: 12201
 Client: Cummings

Created By: AF Date: 11/7/12
 Checked By: BAH Date: 11/8/2012

Reference:
 Cummings Properties,
 Engineering Plans, 04/09/08

Figure 7
Soil Gas and Indoor Air Sampling Locations



358 Chestnut Hill Avenue
Boston MA 02135

Project Number: 12201
Client: Cummings

Created By: EF Date: 05/22/14
Checked By: DN Date: 05/22/14

0 5' 10' 20' 40'

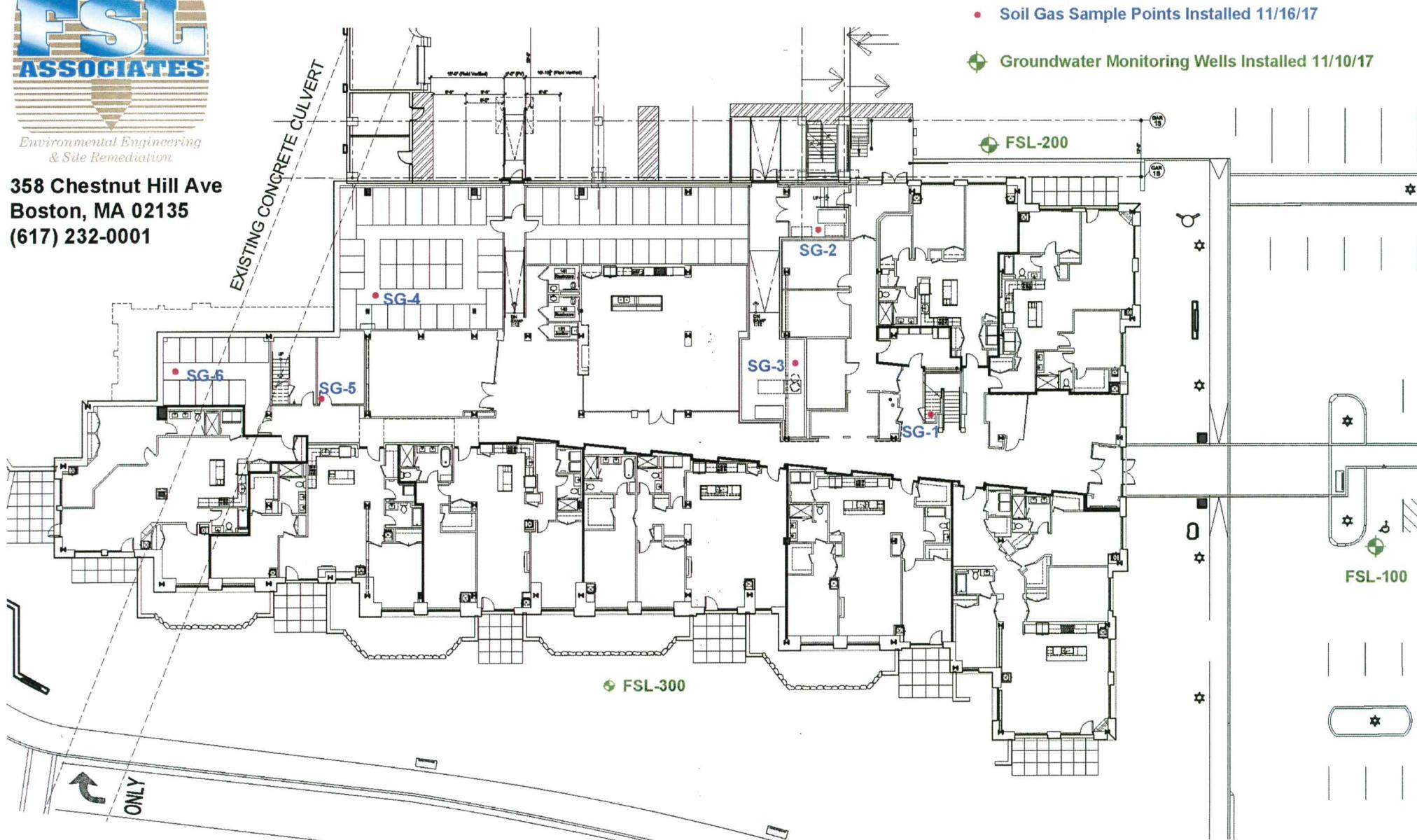


Reference:
Cummings Properties,
Engineering Plans, 05/27/2009



358 Chestnut Hill Ave
Boston, MA 02135
(617) 232-0001

Figure 8
Elliott Landing Soil -Soil Gas & Groundwater Sampling Locations



• Soil Gas Sample Points Installed 11/16/17

• Groundwater Monitoring Wells Installed 11/10/17

TABLES

Table 1 – Groundwater Analytical Results

Table 2 – Soil Gas Chemical Analytical Results

Table 3 – Indoor Air Chemical Analytical Results

Table 4 – Vapor Intrusion Comparison of Groundwater, Soil Gas, and Indoor Air Chemical Analysis
Results for Detected Compounds

Table 1. Groundwater Analytical Results

Cummings Center

181 Elliott Street

Bevelry, MA 01915

Sample Location	FSL-8	FSL-9	FSL-10	FSL-11	FSL-12	Duplicate of FSL-12	FSL-100	Duplicate of FSL-100	FSL-200	FSL-300	Max Value	MADEP RCGW-2 ¹	MADEP Method 1 GW Standards ³	UCLs ⁴
Sample Date	01/15/18	01/15/18	01/15/18	01/15/18	01/15/18	01/15/18	01/15/18	01/15/18	01/15/18	01/15/18	Max Value	GW-2	GW-3	
Groundwater Category	GW-2/GW-3	GW-2/GW-3	GW-2/GW-3	GW-2/GW-3	GW-2/GW-3	GW-2/GW-3	GW-2/GW-3	GW-2/GW-3	GW-2/GW-3	GW-2/GW-3				
VPH														
Methyl-tert-butylether	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	0.0	5,000	50,000	50,000
Benzene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	1,000	1,000	10,000
Toluene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	40,000	50,000	40,000
Ethylbenzene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	5,000	20,000	5,000
m,p-Xylene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	3,000	3,000	5,000
o-Xylene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	3,000	3,000	5,000
Naphthalene	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	0.0	1,000	700	20,000
Adjusted C5-C8 Aliphatics (FID)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	0.0	3,000	3,000	50,000
Adjusted C9-C12 Aliphatics (FID)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	0.0	5,000	5,000	100,000
C9-C10 Aromatics (PID)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	0.0	4,000	4,000	50,000
EPH/PAH														
C9-C18 Aliphatics	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	0.0	5,000	5,000	50,000
C19-C36 Aliphatics	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	138	138.0	50,000	NA
C11 - C22 Aromatics	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	110	110.0	5,000	5,000
Naphthalene	1.3	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	1,000	700	20,000
2-Methylnaphthalene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	2,000	2,000	100,000
Acenaphthylene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	40	10,000	40
Acenaphthene	0.64	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.6	10,000	NA	10,000
Fluorene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	40	NA	40
Phenanthrene	0.552	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.6	10,000	NA	10,000
Anthracene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	30	NA	30
Fluoranthene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	200	NA	200
Pyrene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	20	NA	600
Benzo(a)anthracene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	1,000	NA	1,000
Chrysene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	70	NA	70
Benzo(b)fluoranthene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	400	NA	4,000
Benzo(k)fluoranthene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	100	NA	1,000
Benzo(a)pyrene	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.0	500	NA	5,000
Indeno(1,2,3-cd)pyrene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	100	NA	1,000
Dibenzo(a,h)anthracene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	40	NA	400
Benzo(g,h,i)perylene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.0	20	NA	500
VOCs														
Acetone	<5.0	<5.0	<5.0	10	7.9	7.5	<5.0	<5.0	<5.0	<5.0	10.0	50,000	50,000	50,000
Tertiary Amyl Methyl Ether	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	NS	NS	NS
Benzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.0	1,000	1,000	10,000
Bromobenzene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	10,000	NS	NS
Bromoform	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	6	6	50,000
Bromomethane	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	700	700	50,000
n-Butylbenzene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	7	800	8,000
Sec-butylbenzene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	NS	NS	NS
tert-Butylbenzene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.0	10,000	NS	NS
Carbon Disulfide	<2.0	<2.0	<2.0	<2.0										

TABLE 2

**Soil Gas Chemical Analysis Results
Cummings Center, Beverly, MA
January 2018**

TABLE 2

Soil Gas Chemical Analysis Results
 Cummings Center, Beverly, MA
 January 2018

Sample ID	SG-1	SG-2	SG-3	SG-4	Duplicate of SG-4	SG-5	SG-6	SV-1
Sample Location	Elliott Landing	Elliott Landing	Elliott Landing	Building 500				
Sample Type	Soil Gas	Soil Gas	Soil Gas	Soil Gas				
Date Sampled	1/15/2018	1/15/2018	1/15/2018	1/15/2018	1/15/2018	1/15/2018	1/15/2018	1/14/2018
Volatile Organic Compounds (µg/m³)								
Air-Phase Petroleum Hydrocarbon Target Analytes - APH (µg/m³)								
1,3-Butadiene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl-tert-butyl ether	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
Benzene	1.3	<0.60	<0.60	<0.60	<0.60	<0.60	0.76	<0.60
Toluene	2.3	<0.90	<0.90	<0.90	<0.90	<0.90	1.2	1.1
Ethylbenzene	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
m- & p-Xylenes	1.2	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
o-Xylenes	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
Naphthalene	<1.1	<1.1	120	<1.1	18	<1.1	<1.1	1.5
Air-Phase Petroleum Hydrocarbons - APH (µg/m³)								
C ₅ -C ₈ Aliphatic Hydrocarbons	21	36	40	16	13	19	34	23
C ₉ -C ₁₁ Aliphatic Hydrocarbons	85	59	120	42	34	100	240	220
C ₉ -C ₁₀ Aromatic Hydrocarbons	<10	<10	<10	<10	<10	<10	<10	<10

Notes:

Samples collected by FSL Associates, Inc.

Samples submitted to Alpha Analytical of Mansfield, MA

Results presented in µg/m³

J - estimated concentration quantified below reporting limit

E - estimated

BOLD = Detected above laboratory standards

gray shaded = detected above applicable screening value

blue shaded = analytical detection limit above applicable screening value

< = not detected above laboratory detection limit shown

MassDEP Residential Sub-Slab Soil Gas Screening Values are from Vapor Intrusion Guidance, MassDEP

Policy WSC# 16-435, October 2016.

TABLE 2

**Soil Gas Chemical Analysis Results
Cummings Center, Beverly, MA
January 2018**

TABLE 2

Soil Gas Chemical Analysis Results
 Cummings Center, Beverly, MA
 January 2018

Sample ID	SV-2	SV-4	SV-5	Duplicate of SV-5	SV-6	SV-7	SV-8	SV-9
Sample Location	Building 500	Building 100 Suite S-135-C	Building 100 Suite S-149-J	Building 100 Suite S-149-J				
Sample Type	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Date Sampled	1/14/2018	1/14/2018	1/14/2018	1/14/2018	1/14/2018	1/14/2018	1/14/2018	1/14/2018
Volatile Organic Compounds (µg/m³)								
Air-Phase Petroleum Hydrocarbon Target Analytes - APH (µg/m³)								
1,3-Butadiene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl-tert-butyl ether	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
Benzene	10	<0.60	<0.60	<0.60	1.2	<0.60	<0.60	<0.60
Toluene	3.5	1.1	<0.90	<0.90	12	1.4	<0.90	1.2
Ethylbenzene	1.2	<0.90	<0.90	<0.90	1.2	<0.90	<0.90	<0.90
m- & p-Xylenes	2.4	0.97	<0.90	<0.90	3.0	<0.90	<0.90	<0.90
o-Xylenes	1.5	<0.90	<0.90	<0.90	1.4	<0.90	<0.90	<0.90
Naphthalene	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Air-Phase Petroleum Hydrocarbons - APH (µg/m³)								
C ₅ -C ₈ Aliphatic Hydrocarbons	1900	39	40	21	190	67	50	68
C ₉ -C ₁₁ Aliphatic Hydrocarbons	710	130	200	220	330	75	200	180
C ₉ -C ₁₀ Aromatic Hydrocarbons	<10	<10	<10	<10	23	<10	<10	<10

Notes:

Samples collected by FSL Associates, Inc.

Samples submitted to Alpha Analytical of Mansfield, MA

Results presented in µg/m³

J - estimated concentration quantified below reporting limit

E - estimated

BOLD = Detected above laboratory standards

gray shaded = detected above applicable screening value

blue shaded = analytical detection limit above applicable screening value

< = not detected above laboratory detection limit shown

MassDEP Residential Sub-Slab Soil Gas Screening Values are from Vapor Intrusive

Policy WSC# 16-435, October 2016.

TABLE 2

Soil Gas Chemical Analysis Results

Cummings Center, Beverly, MA

January 2018

Sample ID	SV-10	SV-11	SV-12	SV-13	SG-3	Duplicate of SG-3	SG-4	MassDEP Residential Sub-Slab Soil Gas Screening Values
Sample Location	Building 100 Suite S-149-J	Building 600 Suite S-171-X	Building 600 Suite S-171-X	Building 600 Suite S-171-X	Building 100 Suite S-157-J	Building 100 Suite S-157-J	Building 100 Suite S-157-J	
Sample Type	Soil Gas							
Date Sampled	1/14/2018	1/14/2018	1/14/2018	1/14/2018	1/15/2018	1/15/2018	1/15/2018	
Volatile Organic Compounds (µg/m³)								
1,1,1-trichloroethane	2.96	8.24	4.60	1.15	0.087 J	0.093 J	<0.109	210
1,1,2,2-tetrachloroethane	<0.137	<0.137	<0.137	<0.137	<0.137	<0.137	<0.137	2.8
1,1,2-trichloroethane	<0.109	<0.109	<0.109	<0.109	<0.109	<0.109	<0.109	10
1,1-dichloroethane	0.801	<0.081	0.073 J	<0.081	<0.081	<0.081	0.478	56
1,1-dichloroethene	<0.079	<0.079	<0.079	<0.079	<0.079	<0.079	<0.079	56
1,2,4-trichlorobenzene	<0.371	<0.371	<0.371	<0.371	<0.371	0.186 J	<0.371	28
1,2,4-trimethylbenzene	0.472	0.364	0.374	0.221	0.324	0.369	0.718	
1,2-dibromomethane	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	<0.154	0.54
1,2-dichlorobenzene	<0.120	<0.120	<0.120	<0.120	<0.120	<0.120	<0.120	50
1,2-dichloroethane	<0.081	<0.081	<0.081	<0.081	<0.081	<0.081	<0.081	6.3
1,2-dichloropropane	<0.092	<0.092	<0.092	<0.092	<0.092	<0.092	<0.092	8.6
1,3,5-trimethylbenzene	0.103	0.074 J	0.079 J	0.049 J	0.074 J	0.084 J	0.482	
1,3-butadiene	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	
1,3-dichlorobenzene	<0.120	<0.120	<0.120	<0.120	<0.120	<0.120	<0.120	42
1,4-dichlorobenzene	<0.120	0.060 J	<0.120	<0.120	<0.120	<0.120	0.102 J	35
1,4-dioxane	<0.360	<0.360	<0.360	<0.360	<0.360	<0.360	<0.360	33
2,2,4-trimethylpentane	<0.934	<0.934	<0.934	<0.934	<0.934	<0.934	<0.934	
2-butanone	1.78	4.28	1.38 J	<1.47	<1.47	<1.47	7.31	850
2-hexanone	<0.820	<0.820	<0.820	<0.820	<0.820	<0.820	<0.820	
3-chloropropene	<0.626	<0.626	<0.626	<0.626	<0.626	<0.626	<0.626	
Acetone	7.86	10.8	15.3	8.08	2.73	3.18	<2.38	6400
Benzene	0.220 J	0.278 J	<0.319	0.240 J	0.182 J	<0.319	2.38	160
Benzyl Chloride	<1.04	<1.04	<1.04	<1.04	<1.04	<1.04	<1.04	
Bromodichloromethane	0.087 J	<0.134	0.214	<0.134	0.161	0.161	<0.134	9.2
Bromoform	<0.207	<0.207	<0.207	<0.207	<0.207	<0.207	<0.207	150
Bromomethane	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	42
Carbon disulfide	0.230 J	0.240 J	<0.623	<0.623	<0.623	<0.623	1.70	
Carbon tetrachloride	0.510	0.409	0.409	0.453	0.667	0.673	<0.126	38
Chlorobenzene	<0.461	<0.461	0.046 J	<0.461	<0.461	<0.461	<0.461	160
Chloroethane	0.052 J	<0.053	<0.053	<0.053	0.029 J	0.045 J	0.084	
Chloroform	10.8	0.176	0.816	0.215	1.21	0.986	0.054 J	130
Chloromethane	0.343 J	0.227 J	<0.413	0.628	0.452	0.723	0.252 J	
Cis-1,2-dichloroethene	<0.079	<0.079	<0.079	<0.079	<0.079	<0.079	0.206	56
Cis-1,3-dichloropropene	<0.091	<0.091	<0.091	<0.091	<0.091	<0.091	<0.091	41
Cyclohexane	<0.688	<0.688	<0.688	<0.688	<0.688	<0.688	8.43	
Dibromochloromethane	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	6.8
Dichlorodifluoromethane	1.67	1.41	1.81	1.84	2.14	1.81	0.519 J	
Ethanol	4.50 J	24.1	7.01 J	22.8	1.84 J	2.34 J	3.24 J	
Ethyl acetate	0.090 J	0.220 J	<1.80	<1.80	<1.80	<1.80	<1.80	
Ethylbenzene	0.278	0.187	0.156	0.113	0.091	0.087	0.491	520
Freon-113	0.644	0.636	0.644	0.636	0.904	0.782	<0.383	
Freon-114	<0.349	<0.349	<0.349	<0.349	<0.349	<0.349	<0.349	
Hexachlorobutadiene	<0.533	<0.533	<0.533	<0.533	<0.533	<0.533	<0.533	7.4
Hexane	<0.705	<0.705	<0.705	<0.705	<0.705	<0.705	14.8	
Isopropyl alcohol	4.30	6.00	2.27	7.52	1.01 J	1.17	2.25	
Methylene chloride	<1.74	<1.74	<1.74	<1.74	<1.74	<1.74	<1.74	770
MIBK	<2.05	<2.05	<2.05	<2.05	<2.05	<2.05	<2.05	150
MTBE	<0.721	<0.721	<0.721	<0.721	<0.721	<0.721	1.06	2700
M+p-xylene	0.864	0.586	0.547	0.382	0.313	0.321	1.99	1400
n-heptane	<0.820	<0.820	<0.820	<0.820	<0.820	<0.820	3.77	
Naphthalene	0.78	0.68	0.72	0.246 J	0.545	88.1	3.50	42
o-xylene	0.334	0.226	0.208	0.152	0.122	0.126	0.665	1400
Propylene	<0.861	<0.861	<0.861	0.064 J	<0.861	<0.861	13.3	
Styrene	1.97	1.61	1.64	0.835	0.864	0.937	2.39	95
Tetrachloroethylene	0.583	1.15	2.58	0.407	2.62	2.92	0.678	98
Tetrahydrofuran	0.383 J	0.516 J	0.115 J	0.271 J	<0.590	<0.590	0.782	
Toluene	0.901	1.19	0.505	0.528	0.313	0.283	2.61	3800
Trans-1,2-dichloroethene	<0.079	<0.079	<0.079	<0.079	<0.079	<0.079	0.056 J	56
Trans-1,3-dichloropropene	<0.091	<0.091	<0.091	<0.091	<0.091	<0.091	<0.091	41
Trichloroethene	0.156	0.242	0.446	0.065 J	1.38	1.52	0.140	28
Trichlorofluoromethane	1.61	1.62	1.66	1.65	1.73	1.73	0.275 J	
Vinyl acetate	<0.704	<0.704	<0.704	<0.704	<0.704	<0.704	<0.704	
Vinyl bromide	<0.874	<0.874	<0.874	<0.874	<0.874	<0.874	<0.874	
Vinyl chloride	<0.051	<0.051	<0.051	<0.051	<0.051	<0.051	0.189	19

TABLE 2

Soil Gas Chemical Analysis Results
 Cummings Center, Beverly, MA
 January 2018

Sample ID	SV-10	SV-11	SV-12	SV-13	SG-3	Duplicate of SG-3	SG-4	MassDEP Residential Sub-Slab Soil Gas Screening Values	
Sample Location	Building 100 Suite S-149-J	Building 600 Suite S-171-X	Building 600 Suite S-171-X	Building 600 Suite S-171-X	Building 100 Suite S-157-J	Building 100 Suite S-157-J	Building 100 Suite S-157-J		
Sample Type	Soil Gas								
Date Sampled	1/14/2018	1/14/2018	1/14/2018	1/14/2018	1/15/2018	1/15/2018	1/15/2018		
Volatile Organic Compounds (µg/m³)									
Air-Phase Petroleum Hydrocarbon Target Analytes - APH (µg/m³)									
1,3-Butadiene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Methyl-tert-butyl ether	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	1.2	2700	
Benzene	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	2.5	160	
Toluene	0.91	1.2	<0.90	<0.90	<0.90	<0.90	2.9	3800	
Ethylbenzene	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	520	
m- & p- Xylenes	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	2.0	1400	
o-Xylenes	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	1400	
Naphthalene	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	99	42	
Air-Phase Petroleum Hydrocarbons - APH (µg/m³)									
C ₅ -C ₈ Aliphatic Hydrocarbons	170	27	53	26	21	24	1100	4100	
C ₉ -C ₁₂ Aliphatic Hydrocarbons	380	170	240	120	82	90	2200	4800	
C ₉ -C ₁₀ Aromatic Hydrocarbons	<10	<10	<10	<10	<10	<10	<10	700	

Notes:

Samples collected by FSL Associates, Inc.

Samples submitted to Alpha Analytical of Mansfield, MA

Results presented in µg/m³

J - estimated concentration quantified below reporting limit

E - estimated

BOLD = Detected above laboratory standards

gray shaded = detected above applicable screening value

blue shaded = analytical detection limit above applicable screening value

< = not detected above laboratory detection limit shown

MassDEP Residential Sub-Slab Soil Gas Screening Values are from Vapor Intrusion

Policy WSC# 16-435, October 2016.

TABLE 3

Indoor Air Chemical Analysis Results
Cummings Center, Beverly, MA
January 2018

TABLE 3

Indoor Air Chemical Analysis Results

Cummings Center, Beverly, MA

January 2018

Sample ID	S-135C.1	S-135C.2	S-135C.3	Duplicate of S-135C.3	S-149J.1	S-149J.2	S-149J.3	S-157J.1
Sample Location	Building 100 Interior, Suite 135 C	Building 100 Interior, Suite 149 J	Building 100 Interior, Suite 149 J	Building 100 Interior, Suite 149 J	Building 100 Interior, Suite 157 J			
Sample Type	Indoor Air							
Date Sampled	1/13/2018 to 1/14/2018							
Volatile Organic Compounds (µg/m³)								
Air-Phase Petroleum Hydrocarbon Target Analytes - APH (µg/m³)								
1,3-Butadiene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl-tert-butyl ether	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
Benzene	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60
Toluene	16	13	11	11	1.3	1.4	0.98	3.5
Ethylbenzene	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
m- & p-Xylenes	2.1	1.8	1.6	1.6	<0.90	<0.90	<0.90	<0.90
o-Xylenes	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
Naphthalene	1.6	3.0	3.0	3.2	<1.1	<1.1	<1.1	<1.1
Air-Phase Petroleum Hydrocarbons - APH (µg/m³)								
C ₅ -C ₈ Aliphatic Hydrocarbons	290	260	260	230	37	49	40	98
C ₉ -C ₁₂ Aliphatic Hydrocarbons	60	89	90	88	16	13	16	56
C ₉ -C ₁₀ Aromatic Hydrocarbons	<10	<10	<10	<10	<10	<10	<10	<10

Notes:

Samples collected by FSL Associates, Inc.

Samples submitted to Alpha Analytical of Mansfield, MA

Results presented in µg/m³

NA - Not Analyzed

J - estimated concentration quantified below reporting limit

BOLD = Detected above laboratory standards

gray shaded = detected above applicable standard

blue shaded = analytical detection limit above applicable standard

< = not detected above laboratory detection limit shown

EPA Target Risk Levels are from Regional Screening Level Resident Ambient Air Supporting Table, November 2017. Values preceding "(H)" indicate compounds that are not considered to be carcinogenic and risk levels are based on noncarcinogenic risk. "N/A" indicates compounds with no risk information available from this source.

MassDEP Residential Threshold Values are from Vapor Intrusion Guidance, MassDEP

Policy WSC# 16-435, October 2016.

TABLE 3

Indoor Air Chemical Analysis Results

Cummings Center, Beverly, MA

January 2018

TABLE 3

Indoor Air Chemical Analysis Results

Cummings Center, Beverly, MA

January 2018

Sample ID	S-157J.2	S-157J.3	S-1100.1	S-1100.2	S-1100.3	S-171X.1	S-171X.2	S-171X.3
Sample Location	Building 100 Interior, Suite 157 J	Building 100 Interior, Suite 157 J	Building 500 Interior, Suite S-1100	Building 500 Interior, Suite S-1100	Building 500 Interior, Suite S-1100	Building 600 Interior, Suite S-171-X	Building 600 Interior, Suite S-171-X	Building 600 Interior, Suite S-171-X
Sample Type	Indoor Air	Indoor Air	Indoor Air	Indoor Air	Indoor Air	Indoor Air	Indoor Air	Indoor Air
Date Sampled	1/13/2018 to 1/14/2018	1/13/2018 to 1/14/2018	1/13/2018 to 1/14/2018	1/13/2018 to 1/14/2018	1/13/2018 to 1/14/2018	1/13/2018 to 1/14/2018	1/13/2018 to 1/14/2018	1/13/2018 to 1/14/2018
Volatile Organic Compounds (µg/m³)								
Air-Phase Petroleum Hydrocarbon Target Analytes - APH (µg/m³)								
1,3-Butadiene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl-tert-butyl ether	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
Benzene	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60
Toluene	3.8	4.0	23	19	32	1.4	<0.90	<0.90
Ethylbenzene	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
m- & p- Xylenes	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
o-Xylenes	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
Naphthalene	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Air-Phase Petroleum Hydrocarbons - APH (µg/m³)								
C ₅ -C ₈ Aliphatic Hydrocarbons	92	100	110	92	120	200	22	<10
C ₉ -C ₁₂ Aliphatic Hydrocarbons	61	59	55	51	220	61	<10	12
C ₉ -C ₁₀ Aromatic Hydrocarbons	<10	<10	<10	<10	<10	<10	<10	<10

Notes:

Samples collected by FSL Associates, Inc.

Samples submitted to Alpha Analytical of Mansfield, MA

Results presented in µg/m³

NA - Not Analyzed

J - estimated concentration quantified below reporting limit

BOLD = Detected above laboratory standards

gray shaded = detected above applicable standard

blue shaded = analytical detection limit above applicable standard

< = not detected above laboratory detection limit shown

EPA Target Risk Levels are from Regional Screening Level Resident Ambient Air

2017. Values preceding "(HI)" indicate compounds that are not considered to

levels are based on noncarcinogenic risk. "NA" indicates compounds with no

from this source.

MassDEP Residential Threshold Values are from Vapor Intrusion Guidance, Ma

Policy WSC# 16-435, October 2016.

TABLE 3

Indoor Air Chemical Analysis Results
 Cummings Center, Beverly, MA
 January 2018

Sample ID	Duplicate of S-171X.3		
Sample Location	Building 600 Interior, Suite S-171-X	EPA Target Risk: Carcinogenic = 1E-06 or HI = 0.1	MassDEP Residential Threshold Values
Sample Type	Indoor Air		
Date Sampled	1/13/2018 to 1/14/2018		
Volatile Organic Compounds (µg/m³)			
1,1,1-trichloroethane	<0.055	520 (HI)	3
1,1,2,2-tetrachloroethane	<0.069	0.048	0.04
1,1,2-trichloroethane	<0.055	0.18	0.15
1,1-dichloroethane	<0.041	1.8	0.8
1,1-dichloroethene	<0.040	21 (HI)	0.8
1,2,4-trichlorobenzene	<0.074	0.21 (HI)	0.4
1,2,4-trimethylbenzene	<0.049	6.3 (HI)	
1,2-dibromoethane	<0.077	0.0047	0.0078
1,2-dichlorobenzene	<0.060	21 (HI)	0.72
1,2-dichloroethane	0.065 J	0.11	0.09
1,2-dichloropropane	<0.046	0.76	0.12
1,3,5-trimethylbenzene	<0.049	6.3 (HI)	
1,3-butadiene	<0.022	0.094	
1,3-dichlorobenzene	<0.060	21(HI)	0.6
1,4-dichlorobenzene	<0.060	0.26	0.5
1,4-dioxane	<0.180	0.56	0.47
2,2,4-trimethylpentane	<0.126	N/A	
2-butanone	<0.737	520(HI)	12
2-hexanone	<0.123	3.1(HI)	
3-chloropropene	<0.063	0.47	
Acetone	6.68	3,200(HI)	91
Benzene	0.326	0.36	2.3
Benzyl Chloride	<0.192	0.057	
Bromodichloromethane	<0.067	0.076	0.13
Bromoform	<0.103	2.6	2.1
Bromomethane	<0.039	0.52(HI)	0.6
Carbon disulfide	<0.196	73 (HI)	
Carbon tetrachloride	0.497	0.47	0.54
Chlorobenzene	<0.046	5.2 (HI)	2.3
Chloroethane	<0.026	1,000 (HI)	
Chloroform	0.215	0.12	1.9
Chloromethane	1.00	9.4 (HI)	
Cis-1,2-dichloroethene	<0.040	N/A	0.8
Cis-1,3-dichloropropene	<0.045	0.7	0.58
Cyclohexane	<0.103	100 (HI)	
Dibromochloromethane	<0.085	N/A	0.097
Dichlorodifluoromethane	2.23	10 (HI)	
Ethanol	31.7	N/A	
Ethyl acetate	0.115 J	7.3 (HI)	
Ethylbenzene	<0.043	1.1	7.4
Freon-113	0.529	520 (HI)	
Freon-114	<0.175	N/A	
Hexachlorobutadiene	<0.267	0.13	0.11
Hexane	0.134 J	73 (HI)	
Isopropyl alcohol	6.93	21 (HI)	
Methylene chloride	<0.869	100	11
MIBK	<1.02	310 (HI)	2.2
MTBE	<0.036	11	39
M+p-xylene	<0.087	10 (HI)	20
n-heptane	<0.131	42 (HI)	
Naphthalene	<0.131	0.083	0.6
o-xylene	<0.043	10 (HI)	20
Propylene	0.126 J	310 (HI)	
Styrene	0.077 J	100 (HI)	1.4
Tetrachloroethylene	<0.068	11	1.4
Tetrahydrofuran	<0.109	210 (HI)	
Toluene	0.294	520 (HI)	54
Trans-1,2-dichloroethene	<0.040	N/A	0.8
Trans-1,3-dichloropropene	<0.045	0.7	0.58
Trichloroethene	<0.054	0.48	0.4
Trichlorofluoromethane	1.20	N/A	
Vinyl acetate	<0.095	21 (HI)	
Vinyl bromide	<0.101	0.088	
Vinyl chloride	<0.026	0.17	0.27

TABLE 3

Indoor Air Chemical Analysis Results
 Cummings Center, Beverly, MA
 January 2018

Sample ID	Duplicate of S-171X.3		
Sample Location	Building 600 Interior, Suite S-171-X	EPA Target Risk: Carcinogenic = 1E-06 or HI = 0.1	MassDEP Residential Threshold Values
Sample Type	Indoor Air		
Date Sampled	1/13/2018 to 1/14/2018		
Volatile Organic Compounds (µg/m³)			
Air-Phase Petroleum Hydrocarbon Target Analytes - APH (µg/m³)			
1,3-Butadiene	<0.50	0.094	
Methyl-tert-butyl ether	<0.70	11	39
Benzene	<0.60	0.36	2.3
Toluene	<0.90	520 (HI)	54
Ethylbenzene	<0.90	1.1	7.4
m- & p- Xylenes	<0.90	10 (HI)	20
o-Xylenes	<0.90	10 (HI)	20
Naphthalene	<1.1	0.083	0.6
Air-Phase Petroleum Hydrocarbons - APH (µg/m³)			
C ₅ -C ₈ Aliphatic Hydrocarbons	<10	N/A	58
C ₉ -C ₁₂ Aliphatic Hydrocarbons	<10	N/A	68
C ₉ -C ₁₀ Aromatic Hydrocarbons	<10	N/A	10

Notes:

Samples collected by FSL Associates, Inc.

Samples submitted to Alpha Analytical of Mansfield, MA

Results presented in µg/m³

NA - Not Analyzed

J = estimated concentration quantified below reporting limit

BOLD = Detected above laboratory standards

gray shaded = detected above applicable standard

blue shaded = analytical detection limit above applicable standard

< = not detected above laboratory detection limit shown

EPA Target Risk Levels are from Regional Screening Level Resident Ambient Air

2017. Values preceding "(HI)" indicate compounds that are not considered to

levels are based on noncarcinogenic risk. "N/A" indicates compounds with no data from this source.

MassDEP Residential Threshold Values are from Vapor Intrusion Guidance, Massachusetts

Policy WSC# 16-435, October 2016.

TABLE 4

Vapor Intrusion Comparison of Groundwater, Soil Gas, and Indoor Air Chemical Analysis Results for Detected Compounds

Cummings Center, Beverly, MA

January 2018

Sample Location	Building 100 Interior, Suite 135-C				Building 100 Interior, Suite 149-J			
	Range of Compounds Detected	Range of Compounds Detected	Range of Compounds Detected	Suspected Evidence of Vapor Intrusion?	Range of Compounds Detected	Range of Compounds Detected	Range of Compounds Detected	Suspected Evidence of Vapor Intrusion?
Sample Type	Indoor Air ($\mu\text{g}/\text{m}^3$)	Soil Gas ($\mu\text{g}/\text{m}^3$)	Groundwater ($\mu\text{g}/\text{L}$)		Indoor Air ($\mu\text{g}/\text{m}^3$)	Soil Gas ($\mu\text{g}/\text{m}^3$)	Groundwater ($\mu\text{g}/\text{L}$)	
Date Sampled	1/13/2018 to 1/15/2018	1/13/2018 to 1/15/2018	1/13/2018 to 1/15/2018		1/13/2018 to 1/15/2018	1/13/2018 to 1/15/2018	1/13/2018 to 1/15/2018	
Volatile Organic Compounds								
1,1,1-trichloroethane	0.136 to 0.169	0.447 to 16.4	No Data	No	0.131 to 0.153	0.807 to 9.17	ND	No
1,1-dichloroethane	ND	<0.081 to 1.30	No Data	No	ND	0.223 to 0.801	ND	No
1,1-dichloroethene	ND	ND	No Data	No	ND	ND	ND	No
1,2,4-trichlorobenzene	ND	<0.074 to 0.082	No Data	No	ND	ND	ND	No
1,2,4-trimethylbenzene	1.11 to 1.20	0.290 to 3.11	No Data	No	0.152 to 0.262	0.418 to 0.472	ND	No
1,2-dichlorobenzene	ND	ND	No Data	No	ND	ND	ND	No
1,2-dichloroethane	0.130 to 0.150	ND	No Data	No	<0.081 to 0.215	<0.081 to 0.089	ND	No
1,3,5-trimethylbenzene	0.300 to 0.329	0.074 to 2.67	No Data	No	<0.049 to 0.059	0.079 to 0.103	ND	No
1,3-butadiene	0.027 to 0.029	<0.022 to 0.033	No Data	No	ND	ND	No Data	No
1,4-dichlorobenzene	ND	<0.120 to 0.186	No Data	No	ND	ND	ND	No
2,2,4-trimethylpentane	ND	ND	No Data	No	ND	<0.126 to 0.168	No Data	No
2-butanone	2.15 to 2.95	1.62 to 5.57	No Data	No	<1.47 to 2.38	1.73 to 2.80	ND	No
2-hexanone	0.270 to 0.447	<0.123 to 0.902	No Data	No	0.172 to 0.217	<0.123 to 0.434	ND	No
Acetone	34.2 to 43.7	7.51 to 31.8	No Data	No	24.2 to 28.5	7.39 to 26.8	ND	No
Benzene	0.403 to 0.431	<0.319 to 1.11	No Data	No	<0.319 to 0.428	<0.319 to 0.479	ND	No
Bromodichloromethane	ND	ND	No Data	No	ND	ND	ND	No
Bromoform	ND	ND	No Data	No	ND	ND	ND	No
Bromomethane	ND	ND	No Data	No	<0.039 to 0.039	<0.078 to 0.101	ND	No
Carbon disulfide	ND	<0.196 to 0.255	No Data	No	ND	0.230 to 0.392	ND	No
Carbon tetrachloride	0.510 to 0.547	0.315 to 4.33	No Data	No	0.491 to 0.516	0.226 to 0.799	ND	No
Chlorobenzene	ND	<0.046 to 0.129	No Data	No	ND	<0.046 to 0.184	ND	No
Chloroethane	0.077 to 0.103	<0.026 to 0.103	No Data	No	<0.026 to 0.032	<0.026 to 0.103	ND	No
Chloroform	0.190 to 0.215	0.142 to 2.74	No Data	No	0.249 to 0.269	0.903 to 10.8	ND	No
Chloromethane	1.06 to 1.09	<0.207 to 0.820	No Data	No	1.06 to 1.08	0.271 to 0.968	ND	No
Cis-1,2-dichloroethene	ND	<0.079 to 0.151	No Data	No	ND	ND	ND	No
Cyclohexane	0.117 to 0.286	<0.103 to 0.220	No Data	No	<0.103 to 0.124	ND	No Data	No
Dichlorodifluoromethane	1.62 to 1.91	1.54 to 2.66	No Data	No	1.66 to 2.46	1.54 to 2.84	ND	No
Ethanol	618 E to 699 E	5.11 to 25.8	No Data	No	111 to 114	4.50 to 20.3	No Data	No
Ethyl acetate	3.08 to 4.90	0.083 to 0.537	No Data	No	0.436 to 0.800	<0.072 to 0.162	No Data	No
Ethylbenzene	0.352 to 0.413	0.117 to 1.19	No Data	No	0.122 to 0.169	0.165 to 0.278	ND	No
Freon-113	0.491 to 0.552	0.544 to 0.690	No Data	No	0.491 to 0.506	0.613 to 0.690	No Data	No
Freon-114	ND	ND	No Data	No	ND	ND	No Data	No
Hexane	0.310 to 0.433	<0.116 to 0.493	No Data	No	0.183 to 1.90	<0.116 to 0.250	No Data	No
Isopropyl alcohol	212 to 270	3.76 to 12.8	No Data	No	24.3 to 31.2	4.30 to 16.9	No Data	No
Methylene chloride	ND	ND	No Data	No	<1.74 to 18.5	ND	ND	No
MIBK	1.16 to 1.70	<1.02 to 1.87	No Data	No	ND	ND	ND	No
MTBE	ND	ND	No Data	No	ND	ND	ND	No
M+p-xylene	1.72 to 2.27	0.365 to 2.99	No Data	No	0.304 to 0.426	0.586 to 0.864	ND	No
n-heptane	1.54 to 2.02	<0.131 to 1.18	No Data	No	0.143 to 0.217	<0.131 to 0.270	No Data	No
Naphthalene	1.58 to 3.25	<0.262 to 0.807	No Data	No	ND	0.370 to 0.780	1.30	No
o-xylene	0.456 to 0.508	0.143 to 1.30	No Data	No	0.139 to 0.174	0.222 to 0.334	ND	No
Propylene	0.234 to 0.272	<0.059 to 0.874	No Data	No	0.151 to 0.217	<0.059 to 0.401	No Data	No
Styrene	1.98 to 2.91	0.984 to 2.29	No Data	No	0.247 to 0.307	1.49 to 1.97	ND	No
Tetrachloroethylene	ND	0.339 to 1.63	No Data	No	0.217 to 0.278	0.264 to 0.583	ND	No
Tetrahydrofuran	0.265 to 0.321	0.159 to 0.917	No Data	No	0.192 to 0.236	0.262 to 0.416	ND	No
Toluene	11.6 to 16.7	0.550 to 11.2	No Data	No	1.11 to 1.61	0.739 to 1.24	ND	No
Trans-1,2-dichloroethene	ND	ND	No Data	No	ND	<0.079 to 0.131	ND	No
Trichloroethene	ND	<0.107 to 35.2	No Data	No	ND	0.156 to 5.64	ND	No
Trichlorofluoromethane	1.56 to 1.73	1.50 to 3.75	No Data	No	1.18 to 1.22	1.50 to 1.65	ND	No
Vinyl chloride	ND	ND	No Data	No	ND	ND	ND	No
Air-Phase Petroleum Hydrocarbon Target Analytes - APH								
Methyl-tert-butyl ether	ND	ND	No Data	No	ND	ND	ND	No
Benzene	ND	<0.60 to 1.2	No Data	No	ND	ND	ND	No
Toluene	11 to 16	<0.90 to 12	No Data	No	11 to 16	<0.90 to 1.2	ND	No
Ethylbenzene	ND	<0.90 to 1.2	No Data	No	ND	ND	ND	No
m- & p- Xylenes	1.6 to 2.1	<0.90 to 3.0	No Data	No	1.6 to 2.1	ND	ND	No
o-Xylenes	ND	<0.90 to 1.4	No Data	No	ND	ND	ND	No
Naphthalene	1.6 to 3.2	ND	No Data	No	ND	ND	ND	No
Air-Phase Petroleum Hydrocarbons - APH								
C ₅ -C ₈ Aliphatic Hydrocarbons	230 to 290	21 to 190	No Data	No	37 to 49	50 to 170	ND	No
C ₉ -C ₁₂ Aliphatic Hydrocarbons	60 to 90	75 to 330	No Data	No	13 To 16	180 to 380	ND	No
C ₆ -C ₁₀ Aromatic Hydrocarbons	ND	<10 to 23	No Data	No	ND	ND	ND	No

Notes:

Samples collected by FSL Associates, Inc.

Samples submitted to Alpha Analytical of Mansfield, MA

ND - Not Detected

J - estimated concentration quantified below reporting limit

TABLE 4

Vapor Intrusion Comparison of Groundwater, Soil
Cummings Center, Beverly, MA
January 2018

Sample Location	Building 100 Interior, Suite 157-J				Building 500 Interior, Suite 5-1100				
	Range of Compounds Detected		Range of Compounds Detected		Suspected Evidence of Vapor Intrusion?	Range of Compounds Detected		Range of Compounds Detected	
	Indoor Air ($\mu\text{g}/\text{m}^3$)	Soil Gas ($\mu\text{g}/\text{m}^3$)	Range of Compounds Detected	Groundwater ($\mu\text{g}/\text{L}$)		Indoor Air ($\mu\text{g}/\text{m}^3$)	Soil Gas ($\mu\text{g}/\text{m}^3$)	Groundwater ($\mu\text{g}/\text{L}$)	Suspected Evidence of Vapor Intrusion?
Sample Type	Date Sampled				1/13/2018 to 1/15/2018	1/13/2018 to 1/15/2018	1/13/2018 to 1/15/2018	1/13/2018 to 1/15/2018	1/13/2018 to 1/15/2018
Volatile Organic Compounds									
1,1,1-trichloroethane	ND	ND	ND	No	ND	0.311 to 10.4	ND	No	
1,1-dichloroethane	ND	<0.081 to 0.478	ND	No	ND	0.757 to 9.15	ND	No	
1,1-dichloroethene	ND	ND	ND	No	ND	<0.079 to 0.127	ND	No	
1,2,4-trichlorobenzene	ND	<0.074 to 0.186	ND	No	ND	ND	ND	No	
1,2,4-trimethylbenzene	0.501 to 0.595	0.324 to 0.718	ND	No	0.172 to 0.197	0.408 to 0.644	ND	No	
1,2-dichlorobenzene	ND	ND	ND	No	ND	ND	ND	No	
1,2-dichloroethane	<0.081 to 0.081	ND	ND	No	0.275 to 0.364	ND	ND	No	
1,3,5-trimethylbenzene	0.128 to 0.157	0.074 to 0.482	ND	No	0.054 to 0.064	0.079 to 0.344	ND	No	
1,3-butadiene	ND	ND	No Data	No	<0.022 to 0.027	ND	No Data	No	
1,4-dichlorobenzene	ND	ND	ND	No	ND	ND	ND	No	
2,2,4-trimethylpentane	ND	ND	No Data	No	ND	ND	No Data	No	
2-butanone	<1.47 to 1.61	<1.47 to 7.31	ND	No	34.8 to 101	2.29 to 7.61	ND	No	
2-hexanone	ND	ND	ND	No	ND	ND	ND	No	
Acetone	13.2 to 17.3	<2.38 to 3.18	ND	No	44.2 to 55.8	<2.38 to 6.51	7.5 to 10	No	
Benzene	0.345 to 0.361	<0.319 to 2.38	ND	No	0.329 to 0.409	0.569 to 9.46	ND	No	
Bromodichloromethane	ND	<0.134 to 0.161	ND	No	ND	ND	ND	No	
Bromoform	ND	ND	ND	No	ND	ND	ND	No	
Bromomethane	ND	ND	ND	No	ND	ND	ND	No	
Carbon disulfide	ND	<0.196 to 1.70	ND	No	ND	0.523 to 16.0	ND	No	
Carbon tetrachloride	0.522 to 0.541	<0.126 to 0.673	ND	No	0.497 to 0.516	<0.126 to 0.585	ND	No	
Chlorobenzene	ND	ND	ND	No	ND	ND	ND	No	
Chloroethane	<0.026 to 0.029	0.029 to 0.084	ND	No	ND	0.058 to 0.198	ND	No	
Chloroform	0.230 to 0.278	<0.098 to 1.21	ND	No	0.161 to 0.161	0.342 to 9.62	ND	No	
Chloromethane	1.07 to 1.11	0.252 to 0.723	ND	No	0.935 to 1.08	ND	ND	No	
Cis-1,2-dichloroethene	0.143 to 0.178	<0.079 to 0.206	ND	No	ND	<0.079 to 1.26	ND	No	
Cyclohexane	0.148 to 0.179	<0.103 to 8.43	No Data	No	ND	0.227 to 27.1	No Data	No	
Dichlorodifluoromethane	1.72 to 1.97	<0.519 to 2.14	ND	No	1.56 to 2.46	0.529 to 2.59	ND	No	
Ethanol	145 to 185	1.84 to 3.24	No Data	No	226 to 407	5.03 to 6.39	No Data	No	
Ethyl acetate	0.789 to 1.46	<0.072 to 0.079	No Data	No	0.551 to 6.88	0.259 to 1.80	No Data	No	
Ethylbenzene	0.321 to 0.378	0.087 to 0.491	ND	No	0.152 to 0.187	0.182 to 0.982	ND	No	
Freon-113	0.498 to 0.583	<0.192 to 0.904	No Data	No	0.537 to 0.736	0.268 to 0.690	No Data	No	
Freon-114	ND	ND	No Data	No	ND	ND	No Data	No	
Hexane	0.335 to 0.476	<0.116 to 14.8	No Data	No	0.285 to 0.455	<0.116 to 38.4	No Data	No	
Isopropyl alcohol	56.3 to 72.8	1.01 to 2.25	No Data	No	81.4 to 111	3.34 to 8.43	No Data	No	
Methylene chloride	ND	ND	ND	No	ND	ND	ND	No	
MIBK	ND	ND	ND	No	ND	ND	ND	No	
MTBE	ND	<0.721 to 1.06	ND	No	ND	ND	ND	No	
M+p-xylene	0.617 to 0.721	0.313 to 1.99	ND	No	0.417 to 0.534	0.625 to 1.95	ND	No	
n-heptane	0.307 to 0.352	<0.131 to 3.77	No Data	No	0.451 to 0.500	<0.131 to 12.7	No Data	No	
Naphthalene	ND	0.545 to 88.1	ND	No	ND	0.37 to 1.27	ND	No	
o-xylene	0.256 to 0.300	0.122 to 0.665	ND	No	0.174 to 0.243	0.230 to 1.26	ND	No	
Propylene	0.160 to 0.193	<0.059 to 13.3	No Data	No	0.148 to 0.268	1.80 to 170 E	No Data	No	
Styrene	0.370 to 0.468	0.864 to 2.39	ND	No	0.260 to 0.324	1.80 to 2.25	ND	No	
Tetrachloroethylene	0.509 to 0.583	0.678 to 2.92	ND	No	ND	2.03 to 8.82	ND	No	
Tetrahydrofuran	0.383 to 0.717	<0.109 to 0.782	ND	No	<0.109 to 0.413	0.472 to 0.590	ND	No	
Toluene	3.60 to 4.33	0.283 to 2.61	ND	No	20.3 to 34.4	1.11 to 3.01	ND	No	
Trans-1,2-dichloroethene	ND	ND	ND	No	ND	<0.079 to 0.246	ND	No	
Trichloroethene	<0.107 to 0.118	0.138 to 1.52	ND	No	ND	0.908 to 1.10	ND	No	
Trichlorofluoromethane	1.26 to 13.2	0.275 to 1.73	ND	No	1.24 to 1.30	0.601 to 2.62	ND	No	
Vinyl chloride	ND	<0.051 to 0.189	ND	No	ND	<0.051 to 0.345	ND	No	
Air-Phase Petroleum Hydrocarbon Target Analytes - APH									
Methyl-tert-butyl ether	ND	<0.70 to 1.2	ND	No	ND	ND	ND	No	
Benzene	ND	<0.60 to 2.5	ND	No	ND	<0.60 to 10	ND	No	
Toluene	3.5 to 4.0	<0.09 to 2.9	ND	No	19 to 32	1.1 to 3.5	ND	No	
Ethylbenzene	ND	ND	ND	No	ND	<0.90 to 1.2	ND	No	
m- & p- Xylenes	ND	<0.90 to 2.0	ND	No	ND	<0.90 to 2.4	ND	No	
o-Xylenes	ND	ND	ND	No	ND	<0.90 to 1.5	ND	No	
Naphthalene	ND	<1.1 to 99	ND	No	ND	<1.1 to 1.5	ND	No	
Air-Phase Petroleum Hydrocarbons - APH									
C ₅ -C ₈ Aliphatic Hydrocarbons	92 to 100	21 to 1100	ND	No	92 to 120	23 to 1900	ND	No	
C ₉ -C ₁₂ Aliphatic Hydrocarbons	56 to 61	82 to 2200	ND	No	51 to 220	220 to 710	ND	No	
C ₆ -C ₁₀ Aromatic Hydrocarbons	ND	ND	ND	No	ND	ND	ND	No	

Notes:

Samples collected by FSL Associates, Inc.

Samples submitted to Alpha Analytical of Mansfield, MA

ND - Not Detected

J - estimated concentration quantified below reporting limit

TABLE 4

Vapor Intrusion Comparison of Groundwater, Soil Gas, and Indoor Air

Cummings Center, Beverly, MA

January 2018

Sample Location	Building 600 Interior, Suite S-171-X				Suspected Evidence of Vapor Intrusion?	Elliott Landing		
	Range of Compounds Detected		Range of Compounds Detected			Range of Compounds Detected	Range of Compounds Detected	
	Indoor Air ($\mu\text{g}/\text{m}^3$)	Soil Gas ($\mu\text{g}/\text{m}^3$)	Groundwater ($\mu\text{g}/\text{L}$)	Soil Gas ($\mu\text{g}/\text{m}^3$)	Groundwater ($\mu\text{g}/\text{L}$)		Soil Gas ($\mu\text{g}/\text{m}^3$)	Groundwater ($\mu\text{g}/\text{L}$)
Date Sampled								
Volatile Organic Compounds								
1,1,1-trichloroethane	ND	1.15 to 8.24	ND	No	0.153 to 2.79	ND	ND	No
1,1-dichloroethane	ND	ND	ND	No	<0.081 to 0.777	ND	ND	No
1,1-dichloroethene	ND	ND	ND	No	ND	ND	ND	No
1,2,4-trichlorobenzene	<0.074 to 0.111	ND	ND	No	ND	ND	ND	No
1,2,4-trimethylbenzene	<0.049 to 0.089	0.221 to 0.374	ND	No	0.197 to 0.733	ND	ND	No
1,2-dichlorobenzene	ND	ND	ND	No	<0.120 to 0.138	ND	ND	No
1,2-dichloroethane	ND	ND	ND	No	<0.081 to 0.231	ND	ND	No
1,3,5-trimethylbenzene	ND	0.049 to 0.079	ND	No	0.049 to 0.295	ND	ND	No
1,3-butadiene	ND	ND	No Data	No	0.029 to 0.186	No Data	No	No
1,4-dichlorobenzene	ND	ND	ND	No	ND	ND	ND	No
2,2,4-trimethylpentane	ND	ND	No Data	No	0.276 to 0.556	No Data	No	No
2-butanone	<1.47 to 6.08	<1.47 to 4.28	ND	No	<1.47 to 20.4	ND	ND	No
2-hexanone	ND	ND	ND	No	ND	ND	ND	No
Acetone	6.68 to 15.2	8.08 to 15.3	7.5 to 10	No	2.40 to 27.8	ND	ND	No
Benzene	0.319 to 0.377	ND	ND	No	ND	ND	ND	No
Bromodichloromethane	<0.134 to 0.134	<0.134 to 0.214	ND	No	ND	ND	ND	No
Bromoform	ND	ND	ND	No	ND	ND	ND	No
Bromomethane	ND	ND	ND	No	ND	ND	ND	No
Carbon disulfide	ND	<0.196 to 0.240	ND	No	0.240 to 1.54	ND	ND	No
Carbon tetrachloride	0.472 to 0.503	0.409 to 0.453	ND	No	<0.126 to 0.560	ND	ND	No
Chlorobenzene	ND	<0.046 to 0.046	ND	No	ND	ND	ND	No
Chloroethane	ND	ND	ND	No	0.029 to 0.216	ND	ND	No
Chloroform	0.205 to 0.371	0.176 to 0.816	ND	No	0.278 to 9.91	ND	ND	No
Chloromethane	0.968 to 1.01	<0.207 to 0.628	ND	No	0.244 to 1.13	ND	ND	No
Cis-1,2-dichloroethene	ND	ND	ND	No	<0.079 to 0.599	ND	ND	No
Cyclohexane	<0.103 to 0.403	ND	No Data	No	0.117 to 0.293	No Data	No	No
Dichlorodifluoromethane	1.38 to 2.23	1.41 to 1.84	ND	No	ND	ND	ND	No
Ethanol	31.7 to 132	7.01 to 24.1	No Data	No	1.13 to 3.00	No Data	No	No
Ethyl acetate	0.115 to 0.234	<0.072 to 0.220	No Data	No	0.087 to 1.76	No Data	No	No
Ethylbenzene	<0.087 to 0.087	0.113 to 0.187	ND	No	<0.087 to 0.456	ND	No	No
Freon-113	0.468 to 0.544	0.636 to 0.644	No Data	No	0.598 to 1.07	No Data	No	No
Freon-114	ND	ND	No Data	No	<0.349 to 0.524	No Data	No	No
Hexane	0.134 to 0.402	ND	No Data	No	ND	No Data	No	No
Isopropyl alcohol	6.17 to 17.1	2.27 to 7.52	No Data	No	0.442 to 4.03	No Data	No	No
Methylene chloride	<1.74 to 4.76	ND	ND	No	ND	ND	ND	No
MBK	<1.02 to 1.28	ND	ND	No	ND	ND	ND	No
MTBE	ND	ND	ND	No	ND	ND	ND	No
M+p-xylene	<0.174 to 0.187	0.382 to 0.586	ND	No	0.278 to 1.22	ND	ND	No
n-heptane	<0.131 to 0.213	ND	No Data	No	0.148 to 0.340	No Data	No	No
Naphthalene	ND	<0.262 to 0.720	ND	No	0.398 to 110	ND	Undetermined	No
o-xylene	<0.087 to 0.087	0.152 to 0.226	ND	No	0.104 to 0.460	ND	No	No
Propylene	0.126 to 0.182	<0.059 to 0.064	No Data	No	0.065 to 1.47	No Data	No	No
Styrene	<0.085 to 0.511	0.835 to 1.64	ND	No	0.681 to 2.07	ND	No	No
Tetrachloroethylene	<0.136 to 0.414	0.407 to 2.58	ND	No	0.292 to 7.93	ND	No	No
Tetrahydrofuran	ND	0.115 to 0.516	ND	No	0.186 to 14.7	ND	No	No
Toluene	0.294 to 1.37	0.505 to 1.19	ND	No	0.298 to 2.23	ND	No	No
Trans-1,2-dichloroethene	ND	ND	ND	No	<0.079 to 0.519	ND	No	No
Trichloroethene	ND	<0.107 to 0.446	ND	No	0.435 to 13.5	ND	No	No
Trichlorofluoromethane	1.14 to 1.21	1.62 to 1.65	ND	No	1.60 to 2.62	ND	No	No
Vinyl chloride	ND	ND	ND	No	ND	ND	ND	No
Air-Phase Petroleum Hydrocarbon Target Analytes - APH								
Methyl-tert-butyl ether	ND	ND	ND	No	ND	ND	ND	No
Benzene	ND	ND	ND	No	<0.60 to 1.3	ND	ND	No
Toluene	ND	<0.90 to 1.2	ND	No	<0.90 to 2.3	ND	ND	No
Ethylbenzene	ND	ND	ND	No	ND	ND	ND	No
m- & p-Xylenes	ND	ND	ND	No	<0.90 to 1.2	ND	ND	No
o-Xylenes	ND	ND	ND	No	ND	ND	ND	No
Naphthalene	ND	ND	ND	No	<1.1 to 120	ND	Undetermined	No
Air-Phase Petroleum Hydrocarbons - APH								
C ₅ -C ₈ Aliphatic Hydrocarbons	<10 to 22	26 to 53	ND	No	13 to 40	ND	ND	No
C ₉ -C ₁₂ Aliphatic Hydrocarbons	<10 to 12	120 to 240	ND	No	34 to 240	ND	ND	No
C ₉ -C ₁₀ Aromatic Hydrocarbons	ND	ND	ND	No	ND	ND	ND	No

Notes:

Samples collected by FSL Associates, Inc.

Samples submitted to Alpha Analytical of Mansfield, MA

ND - Not Detected

J - estimated concentration quantified below reporting limit

APPENDIX A

GROUNDWATER SAMPLING WELL RECORDS AND FIELD PARAMETERS

APPENDIX B

GROUNDWATER ANALYTICAL ANALYSIS RESULTS



ANALYTICAL REPORT

Lab Number:	L1801514
Client:	FSL Associates 358 Chestnut Hill Ave. Brighton, MA 02135
ATTN:	Bruce Hoskins
Phone:	(617) 232-0001
Project Name:	CUMMINGS BEVERLY
Project Number:	Not Specified
Report Date:	01/23/18

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1801514-01	FSL-8	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 09:25	01/16/18
L1801514-02	FSL-9	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 08:50	01/16/18
L1801514-03	FSL-10	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 15:05	01/16/18
L1801514-04	FSL-11	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 11:15	01/16/18
L1801514-05	FSL-12	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 10:15	01/16/18
L1801514-06	DUPLICATE	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 10:15	01/16/18
L1801514-07	TRIP BLANK	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 00:00	01/16/18
L1801514-08	FIELD BLANK	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 15:30	01/16/18

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

The continuing calibration standards, associated with L1801514-01 through -08, are included as an addendum to this report.

In reference to question H:

The initial calibration, associated with L1801514-01 through -08, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0018), as well as the average response factor for 1,4-dioxane.

VPH

In reference to question H:

The WG1081909-6/-7 MS/MSD recoveries, performed on L1801514-04, are outside the acceptance criteria for c9-c10 aromatics (55%/63%); however, the associated LCS/LCSD recoveries are within overall method allowances. No further action was required.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Melissa Cripps

Title: Technical Director/Representative

Date: 01/23/18

ORGANICS



VOLATILES

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID: L1801514-01 Date Collected: 01/15/18 09:25
 Client ID: FSL-8 Date Received: 01/16/18
 Sample Location: 181 ELLIOTT STREET, BEVERLY, MA Field Prep: Not Specified

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 01/19/18 07:06
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-01	Date Collected:	01/15/18 09:25		
Client ID:	FSL-8	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	ND	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-01	Date Collected:	01/15/18 09:25
Client ID:	FSL-8	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	101		70-130

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-02	Date Collected:	01/15/18 08:50
Client ID:	FSL-9	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Matrix:	Water
Analytical Method:	97,8260C
Analytical Date:	01/17/18 19:29
Analyst:	KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-02	Date Collected:	01/15/18 08:50		
Client ID:	FSL-9	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	ND	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-02	Date Collected:	01/15/18 08:50
Client ID:	FSL-9	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	99		70-130

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-03	Date Collected:	01/15/18 15:05
Client ID:	FSL-10	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Matrix:	Water
Analytical Method:	97,8260C
Analytical Date:	01/17/18 19:59
Analyst:	KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-03	Date Collected:	01/15/18 15:05		
Client ID:	FSL-10	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	ND	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-03	Date Collected:	01/15/18 15:05
Client ID:	FSL-10	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	99		70-130

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-04	Date Collected:	01/15/18 11:15
Client ID:	FSL-11	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Matrix:	Water
Analytical Method:	97,8260C
Analytical Date:	01/17/18 20:29
Analyst:	KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-04	Date Collected:	01/15/18 11:15		
Client ID:	FSL-11	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	10	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-04	Date Collected:	01/15/18 11:15
Client ID:	FSL-11	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	100		70-130

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-05	Date Collected:	01/15/18 10:15
Client ID:	FSL-12	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Matrix:	Water
Analytical Method:	97,8260C
Analytical Date:	01/17/18 20:59
Analyst:	KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-05	Date Collected:	01/15/18 10:15		
Client ID:	FSL-12	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	7.9	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-05	Date Collected:	01/15/18 10:15
Client ID:	FSL-12	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	99		70-130

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID: L1801514-06 Date Collected: 01/15/18 10:15
 Client ID: DUPLICATE Date Received: 01/16/18
 Sample Location: 181 ELLIOTT STREET, BEVERLY, MA Field Prep: Not Specified

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 01/17/18 21:29
 Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-06	Date Collected:	01/15/18 10:15		
Client ID:	DUPLICATE	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	7.5	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-06	Date Collected:	01/15/18 10:15
Client ID:	DUPLICATE	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	99		70-130

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID: L1801514-07 Date Collected: 01/15/18 00:00
 Client ID: TRIP BLANK Date Received: 01/16/18
 Sample Location: 181 ELLIOTT STREET, BEVERLY, MA Field Prep: Not Specified

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 01/17/18 21:58
 Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-07	Date Collected:	01/15/18 00:00		
Client ID:	TRIP BLANK	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	ND	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID: L1801514-07 Date Collected: 01/15/18 00:00
 Client ID: TRIP BLANK Date Received: 01/16/18
 Sample Location: 181 ELLIOTT STREET, BEVERLY, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	99		70-130

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID: L1801514-08 Date Collected: 01/15/18 15:30
 Client ID: FIELD BLANK Date Received: 01/16/18
 Sample Location: 181 ELLIOTT STREET, BEVERLY, MA Field Prep: Not Specified

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 01/17/18 22:28
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-08	Date Collected:	01/15/18 15:30		
Client ID:	FIELD BLANK	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	ND	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID: L1801514-08 Date Collected: 01/15/18 15:30
 Client ID: FIELD BLANK Date Received: 01/16/18
 Sample Location: 181 ELLIOTT STREET, BEVERLY, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	99		70-130

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/17/18 16:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	02-08		Batch:	WG1081757-5	
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/17/18 16:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	02-08		Batch:	WG1081757-5	
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/17/18 16:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	02-08		Batch:	WG1081757-5	
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
Ethyl Acetate	ND		ug/l	10	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	2.0	--
Iodomethane	ND		ug/l	10	--
tert-Butyl Alcohol	ND		ug/l	10	--
Vinyl acetate	ND		ug/l	2.5	--
Acrolein	ND		ug/l	10	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Ethyl methacrylate	ND		ug/l	5.0	--
Methyl cyclohexane	ND		ug/l	10	--
Cyclohexane	ND		ug/l	10	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
1,4-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/17/18 16:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	02-08	Batch:	WG1081757-5		
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Halothane	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	98		70-130



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/19/18 05:36
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01	Batch:	WG1082218-5		
Methylene chloride	ND	ug/l	2.0	--	
1,1-Dichloroethane	ND	ug/l	1.0	--	
Chloroform	ND	ug/l	1.0	--	
Carbon tetrachloride	ND	ug/l	1.0	--	
1,2-Dichloropropane	ND	ug/l	1.0	--	
Dibromochloromethane	ND	ug/l	1.0	--	
1,1,2-Trichloroethane	ND	ug/l	1.0	--	
Tetrachloroethene	ND	ug/l	1.0	--	
Chlorobenzene	ND	ug/l	1.0	--	
Trichlorofluoromethane	ND	ug/l	2.0	--	
1,2-Dichloroethane	ND	ug/l	1.0	--	
1,1,1-Trichloroethane	ND	ug/l	1.0	--	
Bromodichloromethane	ND	ug/l	1.0	--	
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	
1,1-Dichloropropene	ND	ug/l	2.0	--	
Bromoform	ND	ug/l	2.0	--	
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	
Benzene	ND	ug/l	0.50	--	
Toluene	ND	ug/l	1.0	--	
Ethylbenzene	ND	ug/l	1.0	--	
Chloromethane	ND	ug/l	2.0	--	
Bromomethane	ND	ug/l	2.0	--	
Vinyl chloride	ND	ug/l	1.0	--	
Chloroethane	ND	ug/l	2.0	--	
1,1-Dichloroethene	ND	ug/l	1.0	--	
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	
Trichloroethene	ND	ug/l	1.0	--	



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/19/18 05:36
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01	Batch:	WG1082218-5		
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/19/18 05:36
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01	Batch:	WG1082218-5		
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	100		70-130



Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02-08 Batch: WG1081757-3 WG1081757-4								
Methylene chloride	98		99		70-130	1		20
1,1-Dichloroethane	100		98		70-130	2		20
Chloroform	100		98		70-130	2		20
Carbon tetrachloride	100		98		70-130	2		20
1,2-Dichloropropane	99		98		70-130	1		20
Dibromochloromethane	95		98		70-130	3		20
1,1,2-Trichloroethane	99		100		70-130	1		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	100		100		70-130	0		20
Trichlorofluoromethane	110		100		70-130	10		20
1,2-Dichloroethane	98		100		70-130	2		20
1,1,1-Trichloroethane	100		100		70-130	0		20
Bromodichloromethane	98		98		70-130	0		20
trans-1,3-Dichloropropene	91		93		70-130	2		20
cis-1,3-Dichloropropene	93		95		70-130	2		20
1,1-Dichloropropene	100		99		70-130	1		20
Bromoform	97		100		70-130	3		20
1,1,2,2-Tetrachloroethane	98		100		70-130	2		20
Benzene	98		96		70-130	2		20
Toluene	100		99		70-130	1		20
Ethylbenzene	100		100		70-130	0		20
Chloromethane	100		96		70-130	4		20
Bromomethane	120		100		70-130	18		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02-08 Batch: WG1081757-3 WG1081757-4								
Vinyl chloride	100		98		70-130	2		20
Chloroethane	100		97		70-130	3		20
1,1-Dichloroethene	100		99		70-130	1		20
trans-1,2-Dichloroethene	100		97		70-130	3		20
Trichloroethene	100		97		70-130	3		20
1,2-Dichlorobenzene	99		100		70-130	1		20
1,3-Dichlorobenzene	99		100		70-130	1		20
1,4-Dichlorobenzene	98		99		70-130	1		20
Methyl tert butyl ether	98		100		70-130	2		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	105		100		70-130	5		20
cis-1,2-Dichloroethene	99		97		70-130	2		20
Dibromomethane	96		98		70-130	2		20
1,2,3-Trichloropropane	99		100		70-130	1		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	91		88		70-130	3		20
Acetone	85		76		70-130	11		20
Carbon disulfide	100		99		70-130	1		20
2-Butanone	87		84		70-130	4		20
4-Methyl-2-pentanone	96		99		70-130	3		20
2-Hexanone	83		85		70-130	2		20
Bromochloromethane	98		99		70-130	1		20
Tetrahydrofuran	92		94		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02-08 Batch: WG1081757-3 WG1081757-4								
2,2-Dichloropropane	100		98		70-130	2		20
1,2-Dibromoethane	96		100		70-130	4		20
1,3-Dichloropropane	98		100		70-130	2		20
1,1,1,2-Tetrachloroethane	98		100		70-130	2		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	100		97		70-130	3		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	100		100		70-130	0		20
o-Chlorotoluene	100		100		70-130	0		20
p-Chlorotoluene	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	90		97		70-130	7		20
Hexachlorobutadiene	100		99		70-130	1		20
Isopropylbenzene	110		100		70-130	10		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	96		97		70-130	1		20
n-Propylbenzene	100		100		70-130	0		20
1,2,3-Trichlorobenzene	98		97		70-130	1		20
1,2,4-Trichlorobenzene	98		96		70-130	2		20
1,3,5-Trimethylbenzene	100		100		70-130	0		20
1,2,4-Trimethylbenzene	100		99		70-130	1		20
Ethyl ether	100		99		70-130	1		20
Isopropyl Ether	100		100		70-130	0		20
Ethyl-Tert-Butyl-Ether	99		100		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02-08 Batch: WG1081757-3 WG1081757-4								
Tertiary-Amyl Methyl Ether	98		100		70-130	2		20
1,4-Dioxane	88		92		70-130	4		20
Ethyl Acetate	95		100		70-130	5		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		100		70-130	10		20
Iodomethane	97		96		70-130	1		20
tert-Butyl Alcohol	90		98		70-130	9		20
Vinyl acetate	99		100		70-130	1		20
Acrolein	98		94		70-130	4		20
2-Chloroethylvinyl ether	96		98		70-130	2		20
Ethyl methacrylate	96		98		70-130	2		20
Methyl cyclohexane	110		100		70-130	10		20
Cyclohexane	110		100		70-130	10		20
trans-1,4-Dichloro-2-butene	93		96		70-130	3		20
1,4-Diethylbenzene	100		97		70-130	3		20
4-Ethyltoluene	100		100		70-130	0		20
1,2,4,5-Tetramethylbenzene	110		110		70-130	0		20
1,4-Dichlorobutane	100		100		70-130	0		20
Acrylonitrile	96		100		70-130	4		20
Halothane	100		98		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	<i>LCS</i> %Recovery	Qual	<i>LCSD</i> %Recovery	Qual	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	Qual	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics - Westborough Lab Associated sample(s): 02-08 Batch: WG1081757-3 WG1081757-4								
Surrogate			<i>LCS</i> %Recovery	Qual	<i>LCSD</i> %Recovery	Qual		<i>Acceptance</i> <i>Criteria</i>
1,2-Dichloroethane-d4			99		100			70-130
Toluene-d8			100		99			70-130
4-Bromofluorobenzene			100		100			70-130
Dibromofluoromethane			100		100			70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1082218-3 WG1082218-4								
Methylene chloride	100		95		70-130	5		20
1,1-Dichloroethane	99		95		70-130	4		20
Chloroform	100		98		70-130	2		20
Carbon tetrachloride	110		100		70-130	10		20
1,2-Dichloropropane	98		94		70-130	4		20
Dibromochloromethane	98		94		70-130	4		20
1,1,2-Trichloroethane	98		95		70-130	3		20
Tetrachloroethene	110		100		70-130	10		20
Chlorobenzene	100		98		70-130	2		20
Trichlorofluoromethane	110		100		70-130	10		20
1,2-Dichloroethane	100		97		70-130	3		20
1,1,1-Trichloroethane	110		100		70-130	10		20
Bromodichloromethane	100		96		70-130	4		20
trans-1,3-Dichloropropene	92		88		70-130	4		20
cis-1,3-Dichloropropene	96		92		70-130	4		20
1,1-Dichloropropene	100		98		70-130	2		20
Bromoform	100		98		70-130	2		20
1,1,2,2-Tetrachloroethane	98		94		70-130	4		20
Benzene	100		95		70-130	5		20
Toluene	100		98		70-130	2		20
Ethylbenzene	110		100		70-130	10		20
Chloromethane	98		94		70-130	4		20
Bromomethane	100		100		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1082218-3 WG1082218-4								
Vinyl chloride	99		95		70-130	4		20
Chloroethane	99		94		70-130	5		20
1,1-Dichloroethene	100		96		70-130	4		20
trans-1,2-Dichloroethene	100		95		70-130	5		20
Trichloroethene	100		99		70-130	1		20
1,2-Dichlorobenzene	100		98		70-130	2		20
1,3-Dichlorobenzene	100		99		70-130	1		20
1,4-Dichlorobenzene	100		97		70-130	3		20
Methyl tert butyl ether	96		93		70-130	3		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	105		100		70-130	5		20
cis-1,2-Dichloroethene	100		96		70-130	4		20
Dibromomethane	97		94		70-130	3		20
1,2,3-Trichloropropane	99		98		70-130	1		20
Styrene	105		100		70-130	5		20
Dichlorodifluoromethane	110		100		70-130	10		20
Acetone	100		120		70-130	18		20
Carbon disulfide	98		94		70-130	4		20
2-Butanone	91		93		70-130	2		20
4-Methyl-2-pentanone	88		84		70-130	5		20
2-Hexanone	80		80		70-130	0		20
Bromochloromethane	100		96		70-130	4		20
Tetrahydrofuran	85		84		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1082218-3 WG1082218-4								
2,2-Dichloropropane	100		99		70-130	1		20
1,2-Dibromoethane	97		93		70-130	4		20
1,3-Dichloropropane	98		94		70-130	4		20
1,1,1,2-Tetrachloroethane	100		100		70-130	0		20
Bromobenzene	110		100		70-130	10		20
n-Butylbenzene	100		98		70-130	2		20
sec-Butylbenzene	110		100		70-130	10		20
tert-Butylbenzene	110		100		70-130	10		20
o-Chlorotoluene	100		99		70-130	1		20
p-Chlorotoluene	100		98		70-130	2		20
1,2-Dibromo-3-chloropropane	89		85		70-130	5		20
Hexachlorobutadiene	110		100		70-130	10		20
Isopropylbenzene	110		100		70-130	10		20
p-Isopropyltoluene	110		100		70-130	10		20
Naphthalene	100		97		70-130	3		20
n-Propylbenzene	110		100		70-130	10		20
1,2,3-Trichlorobenzene	100		99		70-130	1		20
1,2,4-Trichlorobenzene	110		100		70-130	10		20
1,3,5-Trimethylbenzene	110		100		70-130	10		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20
Ethyl ether	92		88		70-130	4		20
Isopropyl Ether	96		91		70-130	5		20
Ethyl-Tert-Butyl-Ether	97		93		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1082218-3 WG1082218-4								
Tertiary-Amyl Methyl Ether	98		94		70-130	4		20
1,4-Dioxane	92		88		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		99		70-130
Toluene-d8	97		99		70-130
4-Bromofluorobenzene	99		100		70-130
Dibromofluoromethane	100		101		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
MCP Volatile Organics - Westborough Lab		Associated sample(s): 02-08		QC Batch ID: WG1081757-6	WG1081757-7		QC Sample: L1801514-04		Client ID: FSL-11			
Methylene chloride	ND	10	10	100		10	100		70-130	0		20
1,1-Dichloroethane	ND	10	10	100		10	100		70-130	0		20
Chloroform	ND	10	11	110		10	100		70-130	10		20
Carbon tetrachloride	ND	10	11	110		11	110		70-130	0		20
1,2-Dichloropropane	ND	10	10	100		10	100		70-130	0		20
Dibromochloromethane	ND	10	10	100		10	100		70-130	0		20
1,1,2-Trichloroethane	ND	10	11	110		10	100		70-130	10		20
Tetrachloroethene	ND	10	11	110		11	110		70-130	0		20
Chlorobenzene	ND	10	10	100		10	100		70-130	0		20
Trichlorofluoromethane	ND	10	12	120		12	120		70-130	0		20
1,2-Dichloroethane	ND	10	11	110		10	100		70-130	10		20
1,1,1-Trichloroethane	ND	10	11	110		11	110		70-130	0		20
Bromodichloromethane	ND	10	10	100		10	100		70-130	0		20
trans-1,3-Dichloropropene	ND	10	10	100		9.5	95		70-130	5		20
cis-1,3-Dichloropropene	ND	10	9.9	99		9.5	95		70-130	4		20
1,1-Dichloropropene	ND	10	11	110		11	110		70-130	0		20
Bromoform	ND	10	11	110		10	100		70-130	10		20
1,1,2,2-Tetrachloroethane	ND	10	12	120		11	110		70-130	9		20
Benzene	ND	10	10	100		10	100		70-130	0		20
Toluene	ND	10	10	100		10	100		70-130	0		20
Ethylbenzene	ND	10	11	110		10	100		70-130	10		20
Chloromethane	ND	10	11	110		11	110		70-130	0		20
Bromomethane	ND	10	11	110		11	110		70-130	0		20
Vinyl chloride	ND	10	11	110		11	110		70-130	0		20

Matrix Spike Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
MCP Volatile Organics - Westborough Lab		Associated sample(s): 02-08		QC Batch ID: WG1081757-6	WG1081757-7		QC Sample: L1801514-04		Client ID: FSL-11			
Chloroethane	ND	10	10	100		11	110		70-130	10		20
1,1-Dichloroethene	ND	10	11	110		11	110		70-130	0		20
trans-1,2-Dichloroethene	ND	10	10	100		10	100		70-130	0		20
Trichloroethene	ND	10	11	110		10	100		70-130	10		20
1,2-Dichlorobenzene	ND	10	11	110		10	100		70-130	10		20
1,3-Dichlorobenzene	ND	10	10	100		10	100		70-130	0		20
1,4-Dichlorobenzene	ND	10	10	100		10	100		70-130	0		20
Methyl tert butyl ether	ND	10	11	110		11	110		70-130	0		20
p/m-Xylene	ND	20	21	105		21	105		70-130	0		20
o-Xylene	ND	20	21	105		21	105		70-130	0		20
cis-1,2-Dichloroethene	ND	10	10	100		10	100		70-130	0		20
Dibromomethane	ND	10	11	110		10	100		70-130	10		20
1,2,3-Trichloropropane	ND	10	12	120		11	110		70-130	9		20
Styrene	ND	20	22	110		21	105		70-130	5		20
Dichlorodifluoromethane	ND	10	11	110		11	110		70-130	0		20
Acetone	10	10	18	80		18	80		70-130	0		20
Carbon disulfide	ND	10	10	100		11	110		70-130	10		20
2-Butanone	ND	10	11	110		10	100		70-130	10		20
4-Methyl-2-pentanone	ND	10	12	120		11	110		70-130	9		20
2-Hexanone	ND	10	10	100		9.5	95		70-130	5		20
Bromochloromethane	ND	10	10	100		10	100		70-130	0		20
Tetrahydrofuran	ND	10	11	110		9.9	99		70-130	11		20
2,2-Dichloropropane	ND	10	9.8	98		9.6	96		70-130	2		20
1,2-Dibromoethane	ND	10	11	110		10	100		70-130	10		20

Matrix Spike Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
MCP Volatile Organics - Westborough Lab				Associated sample(s): 02-08		QC Batch ID: WG1081757-6	WG1081757-7		QC Sample: L1801514-04			Client ID: FSL-11
1,3-Dichloropropane	ND	10	11	110		10	100		70-130	10		20
1,1,1,2-Tetrachloroethane	ND	10	10	100		10	100		70-130	0		20
Bromobenzene	ND	10	11	110		10	100		70-130	10		20
n-Butylbenzene	ND	10	10	100		9.6	96		70-130	4		20
sec-Butylbenzene	ND	10	10	100		10	100		70-130	0		20
tert-Butylbenzene	ND	10	10	100		10	100		70-130	0		20
o-Chlorotoluene	ND	10	10	100		10	100		70-130	0		20
p-Chlorotoluene	ND	10	10	100		10	100		70-130	0		20
1,2-Dibromo-3-chloropropane	ND	10	12	120		11	110		70-130	9		20
Hexachlorobutadiene	ND	10	9.9	99		9.8	98		70-130	1		20
Isopropylbenzene	ND	10	11	110		11	110		70-130	0		20
p-Isopropyltoluene	ND	10	10	100		10	100		70-130	0		20
Naphthalene	ND	10	12	120		11	110		70-130	9		20
n-Propylbenzene	ND	10	11	110		11	110		70-130	0		20
1,2,3-Trichlorobenzene	ND	10	11	110		10	100		70-130	10		20
1,2,4-Trichlorobenzene	ND	10	10	100		9.4	94		70-130	6		20
1,3,5-Trimethylbenzene	ND	10	11	110		10	100		70-130	10		20
1,2,4-Trimethylbenzene	ND	10	10	100		10	100		70-130	0		20
Ethyl ether	ND	10	11	110		11	110		70-130	0		20
Isopropyl Ether	ND	10	11	110		10	100		70-130	10		20
Ethyl-Tert-Butyl-Ether	ND	10	11	110		10	100		70-130	10		20
Tertiary-Amyl Methyl Ether	ND	10	11	110		11	110		70-130	0		20
1,4-Dioxane	ND	500	580	116		570	114		70-130	2		20

Matrix Spike Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
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MCP Volatile Organics - Westborough Lab Associated sample(s): 02-08 QC Batch ID: WG1081757-6 WG1081757-7 QC Sample: L1801514-04 Client ID: FSL-11

Surrogate	MS % Recovery		MSD % Recovery		Acceptance Criteria
	Qualifier	Qualifier	Qualifier	Qualifier	
1,2-Dichloroethane-d4	107		104		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	103		101		70-130
Toluene-d8	98		97		70-130

PETROLEUM HYDROCARBONS



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-01	Date Collected:	01/15/18 09:25
Client ID:	FSL-8	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/17/18 21:43		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	84		70-130
2,5-Dibromotoluene-FID	86		70-130



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-01	Date Collected:	01/15/18 09:25		
Client ID:	FSL-8	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/20/18 16:59	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	1.30		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	0.640		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	0.552		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-01	Date Collected:	01/15/18 09:25
Client ID:	FSL-8	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	53		40-140
o-Terphenyl	79		40-140
2-Fluorobiphenyl	94		40-140
2-Bromonaphthalene	85		40-140
O-Terphenyl-MS	83		40-140



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-02	Date Collected:	01/15/18 08:50
Client ID:	FSL-9	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/17/18 22:22		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	77		70-130
2,5-Dibromotoluene-FID	78		70-130



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-02	Date Collected:	01/15/18 08:50		
Client ID:	FSL-9	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/20/18 17:44	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-02	Date Collected:	01/15/18 08:50
Client ID:	FSL-9	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	61		40-140
o-Terphenyl	81		40-140
2-Fluorobiphenyl	89		40-140
2-Bromonaphthalene	82		40-140
O-Terphenyl-MS	89		40-140



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-03	Date Collected:	01/15/18 15:05
Client ID:	FSL-10	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/17/18 23:01		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	86		70-130
2,5-Dibromotoluene-FID	87		70-130



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-03	Date Collected:	01/15/18 15:05		
Client ID:	FSL-10	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/20/18 18:29	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-03	Date Collected:	01/15/18 15:05
Client ID:	FSL-10	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	58		40-140
o-Terphenyl	66		40-140
2-Fluorobiphenyl	77		40-140
2-Bromonaphthalene	67		40-140
O-Terphenyl-MS	87		40-140



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-04	Date Collected:	01/15/18 11:15
Client ID:	FSL-11	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/17/18 23:41		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	80		70-130
2,5-Dibromotoluene-FID	81		70-130



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-04	Date Collected:	01/15/18 11:15		
Client ID:	FSL-11	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/20/18 19:15	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-04	Date Collected:	01/15/18 11:15
Client ID:	FSL-11	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	50		40-140
o-Terphenyl	70		40-140
2-Fluorobiphenyl	93		40-140
2-Bromonaphthalene	86		40-140
O-Terphenyl-MS	76		40-140



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-05	Date Collected:	01/15/18 10:15
Client ID:	FSL-12	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/18/18 01:39		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	82		70-130
2,5-Dibromotoluene-FID	83		70-130



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-05	Date Collected:	01/15/18 10:15		
Client ID:	FSL-12	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/20/18 20:00	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-05	Date Collected:	01/15/18 10:15
Client ID:	FSL-12	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	54		40-140
o-Terphenyl	81		40-140
2-Fluorobiphenyl	94		40-140
2-Bromonaphthalene	87		40-140
O-Terphenyl-MS	82		40-140



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-06	Date Collected:	01/15/18 10:15
Client ID:	DUPLICATE	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/18/18 15:26		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	80		70-130
2,5-Dibromotoluene-FID	80		70-130



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-06	Date Collected:	01/15/18 10:15		
Client ID:	DUPLICATE	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/20/18 20:46	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-06	Date Collected:	01/15/18 10:15
Client ID:	DUPLICATE	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	47		40-140
o-Terphenyl	80		40-140
2-Fluorobiphenyl	95		40-140
2-Bromonaphthalene	88		40-140
O-Terphenyl-MS	83		40-140



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-07	Date Collected:	01/15/18 00:00
Client ID:	TRIP BLANK	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/18/18 14:46		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	75		70-130
2,5-Dibromotoluene-FID	76		70-130



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-08	Date Collected:	01/15/18 15:30
Client ID:	FIELD BLANK	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/18/18 16:05		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	71		70-130
2,5-Dibromotoluene-FID	73		70-130



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-08	Date Collected:	01/15/18 15:30		
Client ID:	FIELD BLANK	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/20/18 21:32	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801514

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801514-08	Date Collected:	01/15/18 15:30
Client ID:	FIELD BLANK	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	66		40-140
o-Terphenyl	76		40-140
2-Fluorobiphenyl	86		40-140
2-Bromonaphthalene	76		40-140
O-Terphenyl-MS	78		40-140



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 01/17/18 10:35
Analyst: MZ

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-05			Batch:	WG1081909-4
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--
Benzene	ND		ug/l	2.00	--
Toluene	ND		ug/l	2.00	--
Ethylbenzene	ND		ug/l	2.00	--
p/m-Xylene	ND		ug/l	2.00	--
o-Xylene	ND		ug/l	2.00	--
Methyl tert butyl ether	ND		ug/l	3.00	--
Naphthalene	ND		ug/l	4.00	--

Surrogate	%Recovery	Qualifier	Acceptance
			Criteria
2,5-Dibromotoluene-PID	100		70-130
2,5-Dibromotoluene-FID	97		70-130

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method:	98,EPH-04-1.1	Extraction Method:	EPA 3510C
Analytical Date:	01/20/18 14:43	Extraction Date:	01/18/18 11:19
Analyst:	DG	M.S. Analyst:	KL
		Cleanup Method:	EPH-04-1
		Cleanup Date:	01/19/18

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s):	01-06,08		Batch:	WG1081927-1	
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--
Naphthalene	ND		ug/l	0.400	--
2-Methylnaphthalene	ND		ug/l	0.400	--
Acenaphthylene	ND		ug/l	0.400	--
Acenaphthene	ND		ug/l	0.400	--
Fluorene	ND		ug/l	0.400	--
Phenanthrene	ND		ug/l	0.400	--
Anthracene	ND		ug/l	0.400	--
Fluoranthene	ND		ug/l	0.400	--
Pyrene	ND		ug/l	0.400	--
Benzo(a)anthracene	ND		ug/l	0.400	--
Chrysene	ND		ug/l	0.400	--
Benzo(b)fluoranthene	ND		ug/l	0.400	--
Benzo(k)fluoranthene	ND		ug/l	0.400	--
Benzo(a)pyrene	ND		ug/l	0.200	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--
Benzo(ghi)perylene	ND		ug/l	0.400	--

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis Batch Quality Control

Analytical Method:	98,EPH-04-1.1	Extraction Method:	EPA 3510C
Analytical Date:	01/20/18 14:43	Extraction Date:	01/18/18 11:19
Analyst:	DG	Cleanup Method:	EPH-04-1
		Cleanup Date:	01/19/18

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 01-06,08			Batch:	WG1081927-1	

Surrogate	%Recovery	Acceptance Criteria	
		Qualifier	Criteria
Chloro-Octadecane	64		40-140
o-Terphenyl	69		40-140
2-Fluorobiphenyl	76		40-140
2-Bromonaphthalene	69		40-140
O-Terphenyl-MS	86		40-140

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 01/18/18 12:07
Analyst: MZ

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s):	06-08			Batch:	WG1082219-4
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--
Benzene	ND		ug/l	2.00	--
Toluene	ND		ug/l	2.00	--
Ethylbenzene	ND		ug/l	2.00	--
p/m-Xylene	ND		ug/l	2.00	--
o-Xylene	ND		ug/l	2.00	--
Methyl tert butyl ether	ND		ug/l	3.00	--
Naphthalene	ND		ug/l	4.00	--

Surrogate	%Recovery	Qualifier	Acceptance
			Criteria
2,5-Dibromotoluene-PID	82		70-130
2,5-Dibromotoluene-FID	81		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-05 Batch: WG1081909-2 WG1081909-3								
C5-C8 Aliphatics	90		102		70-130	13		25
C9-C12 Aliphatics	98		111		70-130	13		25
C9-C10 Aromatics	91		105		70-130	15		25
Benzene	92		104		70-130	12		25
Toluene	94		106		70-130	12		25
Ethylbenzene	100		113		70-130	12		25
p/m-Xylene	98		110		70-130	12		25
o-Xylene	94		106		70-130	12		25
Methyl tert butyl ether	90		102		70-130	13		25
Naphthalene	92		104		70-130	12		25
1,2,4-Trimethylbenzene	91		105		70-130	15		25
Pentane	87		98		70-130	12		25
2-Methylpentane	80		90		70-130	12		25
2,2,4-Trimethylpentane	99		111		70-130	12		25
n-Nonane	96		109		30-130	13		25
n-Decane	98		111		70-130	13		25
n-Butylcyclohexane	99		114		70-130	14		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	91		102		70-130
2,5-Dibromotoluene-FID	90		100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-06,08 Batch: WG1081927-2 WG1081927-3								
C9-C18 Aliphatics	78		75		40-140	4		25
C19-C36 Aliphatics	80		79		40-140	1		25
C11-C22 Aromatics	88		84		40-140	5		25
Naphthalene	82		74		40-140	10		25
2-Methylnaphthalene	76		61		40-140	22		25
Acenaphthylene	74		72		40-140	3		25
Acenaphthene	95		87		40-140	9		25
Fluorene	85		77		40-140	10		25
Phenanthrene	88		80		40-140	10		25
Anthracene	91		85		40-140	7		25
Fluoranthene	88		80		40-140	10		25
Pyrene	90		84		40-140	7		25
Benzo(a)anthracene	86		77		40-140	11		25
Chrysene	93		84		40-140	10		25
Benzo(b)fluoranthene	92		68		40-140	30	Q	25
Benzo(k)fluoranthene	89		66		40-140	30	Q	25
Benzo(a)pyrene	87		80		40-140	8		25
Indeno(1,2,3-cd)Pyrene	100		71		40-140	34	Q	25
Dibenzo(a,h)anthracene	107		77		40-140	33	Q	25
Benzo(ghi)perylene	93		72		40-140	25		25
Nonane (C9)	64		59		30-140	8		25
Decane (C10)	70		66		40-140	6		25
Dodecane (C12)	75		73		40-140	3		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-06,08 Batch: WG1081927-2 WG1081927-3								
Tetradecane (C14)	77		76		40-140	1		25
Hexadecane (C16)	77		78		40-140	1		25
Octadecane (C18)	77		78		40-140	1		25
Nonadecane (C19)	76		77		40-140	1		25
Eicosane (C20)	76		77		40-140	1		25
Docosane (C22)	76		77		40-140	1		25
Tetracosane (C24)	76		76		40-140	0		25
Hexacosane (C26)	75		76		40-140	1		25
Octacosane (C28)	75		76		40-140	1		25
Triacontane (C30)	74		76		40-140	3		25
Hexatriacontane (C36)	74		76		40-140	3		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	72		70		40-140
o-Terphenyl	90		80		40-140
2-Fluorobiphenyl	95		82		40-140
2-Bromonaphthalene	91		72		40-140
O-Terphenyl-MS	80		75		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 06-08 Batch: WG1082219-2 WG1082219-3								
C5-C8 Aliphatics	79		80		70-130	1		25
C9-C12 Aliphatics	95		95		70-130	0		25
C9-C10 Aromatics	94		95		70-130	1		25
Benzene	84		84		70-130	1		25
Toluene	86		87		70-130	1		25
Ethylbenzene	94		94		70-130	1		25
p/m-Xylene	92		93		70-130	1		25
o-Xylene	90		91		70-130	1		25
Methyl tert butyl ether	87		87		70-130	1		25
Naphthalene	92		92		70-130	0		25
1,2,4-Trimethylbenzene	94		95		70-130	1		25
Pentane	75		76		70-130	0		25
2-Methylpentane	70		71		70-130	1		25
2,2,4-Trimethylpentane	88		89		70-130	1		25
n-Nonane	90		91		30-130	1		25
n-Decane	96		97		70-130	1		25
n-Butylcyclohexane	100		100		70-130	0		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	85		84		70-130
2,5-Dibromotoluene-FID	85		81		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Recovery Qual	Limits	RPD	RPD Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab ID: FSL-11				Associated sample(s): 01-05		QC Batch ID: WG1081909-6	WG1081909-7		QC Sample: L1801514-04			Client
C5-C8 Aliphatics	ND	240	221	92		258	108		70-130	15		50
C9-C12 Aliphatics	ND	320	344	108		398	124		70-130	15		50
C9-C10 Aromatics	ND	120	65.7	55	Q	75.8	63	Q	70-130	14		50
Benzene	ND	40	34.5	86		40.9	102		70-130	17		50
Toluene	ND	40	35.1	88		41.3	103		70-130	16		50
Ethylbenzene	ND	40	37.2	93		43.7	109		70-130	16		50
p/m-Xylene	ND	80	72.5	91		85.0	106		70-130	16		50
o-Xylene	ND	40	35.3	88		41.6	104		70-130	16		50
Methyl tert butyl ether	ND	40	36.8	92		43.7	109		70-130	17		50
Naphthalene	ND	40	37.5	94		44.3	111		70-130	17		50
1,2,4-Trimethylbenzene	ND	40	35.0	87		40.3	101		70-130	14		50
Pentane	ND	40	32.2	81		37.9	95		70-130	16		50
2-Methylpentane	ND	40	29.8	74		35.0	88		70-130	16		50
2,2,4-Trimethylpentane	ND	40	36.4	91		42.9	107		70-130	16		50
n-Nonane	ND	40	35.3	88		41.1	103		30-130	15		50
n-Decane	ND	40	36.2	90		40.3	101		70-130	11		50
n-Butylcyclohexane	ND	40	37.2	93		43.0	107		70-130	14		50

Surrogate	MS % Recovery		MSD % Recovery		Acceptance Criteria	
	Qualifier	Qualifier	Qualifier	Qualifier		
2,5-Dibromotoluene-FID	85		97		70-130	
2,5-Dibromotoluene-PID	86		95		70-130	

Matrix Spike Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-06,08 QC Batch ID: WG1081927-4 WG1081927-5 QC Sample: L1801514-04 Client ID: FSL-11												
C9-C18 Aliphatics	ND	600	405	68		412	69		40-140	2		50
C19-C36 Aliphatics	ND	800	582	73		566	71		40-140	3		50
C11-C22 Aromatics	ND	1700	1270	75		1390	82		40-140	9		50
Naphthalene	ND	100	71.9	72		83.2	83		40-140	15		50
2-Methylnaphthalene	ND	100	54.3	54		67.9	68		40-140	22		50
Acenaphthylene	ND	100	64.5	64		72.8	73		40-140	12		50
Acenaphthene	ND	100	85.7	86		95.3	95		40-140	11		50
Fluorene	ND	100	83.4	83		89.0	89		40-140	6		50
Phenanthrene	ND	100	64.0	64		74.2	74		40-140	15		50
Anthracene	ND	100	67.8	68		80.5	80		40-140	17		50
Fluoranthene	ND	100	65.7	66		84.6	85		40-140	25		50
Pyrene	ND	100	67.6	68		83.4	83		40-140	21		50
Benzo(a)anthracene	ND	100	67.4	67		75.4	75		40-140	11		50
Chrysene	ND	100	72.4	72		83.2	83		40-140	14		50
Benzo(b)fluoranthene	ND	100	68.3	68		75.1	75		40-140	9		50
Benzo(k)fluoranthene	ND	100	67.0	67		75.1	75		40-140	11		50
Benzo(a)pyrene	ND	100	69.6	70		76.6	77		40-140	10		50
Indeno(1,2,3-cd)Pyrene	ND	100	72.2	72		77.3	77		40-140	7		50
Dibenzo(a,h)anthracene	ND	100	78.2	78		84.6	85		40-140	8		50
Benzo(ghi)perylene	ND	100	67.4	67		70.4	70		40-140	4		50
Nonane (C9)	ND	100	50.6	51		54.4	54		30-140	7		50
Decane (C10)	ND	100	58.1	58		62.1	62		40-140	7		50
Dodecane (C12)	ND	100	65.7	66		68.8	69		40-140	5		50
Tetradecane (C14)	ND	100	71.0	71		70.9	71		40-140	0		50

Matrix Spike Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD Qual	RPD Limits
EPH w/MS Targets - Westborough Lab	Associated sample(s): 01-06,08		QC Batch ID: WG1081927-4	WG1081927-5	QC Sample: L1801514-04		Client ID: FSL-11				
Hexadecane (C16)	ND	100	72.6	73		70.9	71		40-140	2	50
Octadecane (C18)	ND	100	72.4	72		70.4	70		40-140	3	50
Nonadecane (C19)	ND	100	71.7	72		69.8	70		40-140	3	50
Eicosane (C20)	ND	100	71.4	71		69.5	70		40-140	3	50
Docosane (C22)	ND	100	71.3	71		69.4	69		40-140	3	50
Tetracosane (C24)	ND	100	70.8	71		68.9	69		40-140	3	50
Hexacosane (C26)	ND	100	70.3	70		68.5	68		40-140	3	50
Octacosane (C28)	ND	100	70.3	70		68.6	69		40-140	2	50
Triaccontane (C30)	ND	100	70.2	70		68.5	68		40-140	2	50
Hexatriaccontane (C36)	ND	100	69.6	70		67.8	68		40-140	3	50

Surrogate	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria
2-Bromonaphthalene	85		86		40-140
2-Fluorobiphenyl	92		89		40-140
Chloro-Octadecane	59		50		40-140
O-Terphenyl-MS	58		78		40-140
o-Terphenyl	78		79		40-140

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Serial_No:01231815:13
Lab Number: L1801514
Report Date: 01/23/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1801514-01A	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-01B	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-01C	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-01D	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-01D1	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-01D2	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-01E	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-01F	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-01G	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-01H	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-02A	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-02B	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-02C	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-02D	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-02D1	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-02D2	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-02E	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-02F	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-02G	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-02H	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-03A	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-03B	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-03C	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1801514-03D	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-03D1	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-03D2	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-03E	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-03F	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-03G	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-03H	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-04A	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-04A1	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-04A2	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-04B	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-04B1	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-04B2	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-04C	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-04C1	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-04C2	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-04D	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-04D1	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-04D2	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-04E	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-04E1	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-04E2	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-04F	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-04F1	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-04F2	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-04G	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-04G1	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-04G2	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1801514-04H	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-04H1	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-04H2	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-05A	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-05B	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-05C	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-05D	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-05D1	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-05D2	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-05E	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-05F	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-05G	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-05H	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-06A	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-06B	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-06C	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-06D	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-06D1	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-06D2	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-06E	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-06F	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-06G	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-06H	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-07A	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-07B	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-07C	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-07D	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-07D1	Vial HCl preserved	A	NA		3.6	Y	Absent		-

*Values in parentheses indicate holding time in days

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Serial_No:01231815:13
Lab Number: L1801514
Report Date: 01/23/18

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1801514-07D2	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-07E	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-07F	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-08A	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-08B	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-08C	Vial HCl preserved	A	NA		3.6	Y	Absent		MCP-8260-10(14)
L1801514-08D	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-08D1	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-08D2	Vial HCl preserved	A	NA		3.6	Y	Absent		-
L1801514-08E	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-08F	Vial HCl preserved	A	NA		3.6	Y	Absent		VPH-DELUX-10(14)
L1801514-08G	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801514-08H	Amber 1000ml HCl preserved	A	<2	<2	3.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)

*Values in parentheses indicate holding time in days

Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
Report Date: 01/23/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

- Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.
- Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.
- Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.
- Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.
- Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A - Spectra identified as "Aldol Condensation Product".
- B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report



Project Name: CUMMINGS BEVERLY
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Lab Number: L1801514
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Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedances are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report



Project Name: CUMMINGS BEVERLY
Project Number: Not Specified

Lab Number: L1801514
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REFERENCES

- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO₃-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO₃-F, EPA 353.2: Nitrate-N, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO₄-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT, Enterolert-QT, SM9221E, SM9222D.

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

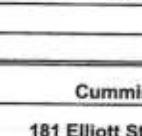
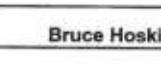
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY RECORD

Laboratory:

01/16/18 Alpha L1801514

Client	FSL Associates																				
Address	358 Chestnut Hill Ave. Boston, MA																				
Contact	Bruce Hoskins																				
Phone #	617-232-0001																				
Project Name	Cummings Beverly																				
Address	181 Elliott Street, Beverly MA																				
Contact	Bruce Hoskins		tel:																		
Location ID #	Fax:		5. Surface Water																		
Description	PO#		6. Other _____																		
Field ID / Point of Collection	Collection		Matrix	# of bottles		Preservation						VOC	VPH	EPH	Comments:						
	Date	Time		Type		Glass	Plastic	VOA's	HCl	NaOH	HNO3							H2SO4	MEOH	Other	None
				Glass	Plastic																
FSL-2	Dh 4			2		6 8									X X X						
FSL-8	1/15/18 0925			2		6 8									X X X						
FSL-9		0850		2		6 8									X X X						
FSL-10		1505		2		6 8									X X X						
FSL-11		1115		2		6 8									X X X						
FSL-12		1015		2		6 8									X X X						
MS/MSD		1115		4		12-5 14									X X X						
Duplicate	↓	1015		2		6 8									X X X						
Trip Blank		—				4 4									X X						
Field Blank		1/15/18 1530		2		6 8									X X X						
Turnaround Information													QA/QC			Additional Information					
<input type="checkbox"/> Std. 10 Day Turnaround <input type="checkbox"/> 7 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH		Approved By:		SPECIAL QA/QC or DATA Requirements:																	
 1400																					
Sample Custody must be documented below each time samples change possession, including courier delivery.																					
Relinquished by Sampler:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:									
		Bruce Hoskins		1/16/18 1455				Danielle Matt		1/16/18 1344		1/16/18 1344									
Relinquished by Sampler:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:									
2		ATL		1/16/18 1227		2		1/16/18 17:27		1/16/18 17:27		1/16/18 17:27									
Relinquished by Sampler:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:									
Preserve where applicable													On Ice	Temp.							

**Method Blank Summary
Form 4**

Client	: FSL Associates	Lab Number	: L1801514
Project Name	: CUMMINGS BEVERLY	Project Number	:
Lab Sample ID	: WG1081757-5	Lab File ID	: VQ180117N04
Instrument ID	: QUIMBY		
Matrix	: WATER	Analysis Date	: 01/17/18 16:29

Client Sample No.	Lab Sample ID	Analysis Date
WG1081757-3LCS	WG1081757-3	01/17/18 14:59
WG1081757-4LCSD	WG1081757-4	01/17/18 15:29
FSL-9	L1801514-02	01/17/18 19:29
FSL-10	L1801514-03	01/17/18 19:59
FSL-11	L1801514-04	01/17/18 20:29
FSL-12	L1801514-05	01/17/18 20:59
DUPLICATE	L1801514-06	01/17/18 21:29
TRIP BLANK	L1801514-07	01/17/18 21:58
FIELD BLANK	L1801514-08	01/17/18 22:28
FSL-11MS	WG1081757-6	01/17/18 23:58
FSL-11MSD	WG1081757-7	01/18/18 00:28

**Method Blank Summary
Form 4**

Client	: FSL Associates	Lab Number	: L1801514
Project Name	: CUMMINGS BEVERLY	Project Number	:
Lab Sample ID	: WG1082218-5	Lab File ID	: VQ180119A04
Instrument ID	: QUIMBY	Analysis Date	
Matrix	: WATER		: 01/19/18 05:36

Client Sample No.	Lab Sample ID	Analysis Date
WG1082218-3LCS	WG1082218-3	01/19/18 04:06
WG1082218-4LCSD	WG1082218-4	01/19/18 04:36
FSL-8	L1801514-01	01/19/18 07:06

**Continuing Calibration
Form 7**

Client	: FSL Associates	Lab Number	: L1801514		
Project Name	: CUMMINGS BEVERLY	Project Number	:		
Instrument ID	: QUIMBY	Calibration Date	: 01/17/18 14:59		
Lab File ID	: VQ180117N01	Init. Calib. Date(s)	: 01/16/18	01/16/18	
Sample No	: WG1081757-2	Init. Calib. Times	: 10:14	15:43	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	93	0
Dichlorodifluoromethane	0.433	0.392	-	9.5	20	83	0
Chloromethane	0.578	0.579	-	-0.2	20	93	0
Vinyl chloride	0.503	0.524	-	-4.2	20	96	0
Bromomethane	10	11.612	-	-16.1	20	106	0
Chloroethane	0.277	0.289	-	-4.3	20	98	0
Trichlorofluoromethane	0.605	0.667	-	-10.2	20	101	0
Ethyl ether	0.157	0.157	-	0	20	95	0
1,1-Dichloroethene	0.351	0.365	-	-4	20	95	0
Carbon disulfide	0.968	1.006	-	-3.9	20	95	0
Freon-113	0.359	0.393	-	-9.5	20	98	0
Iodomethane	0.452	0.438	-	3.1	20	98	0
Acrolein	10	9.76	-	2.4	20	121	0
Methylene chloride	0.415	0.409	-	1.4	20	93	0
Acetone	10	8.506	-	14.9	20	80	0
trans-1,2-Dichloroethene	0.458	0.461	-	-0.7	20	95	0
Methyl acetate	0.165	0.161	-	2.4	20	89	0
Methyl tert-butyl ether	0.804	0.787	-	2.1	20	95	0
tert-Butyl alcohol	0.016	0.015*	-	6.3	20	85	0
Diisopropyl ether	1.337	1.338	-	-0.1	20	92	0
1,1-Dichloroethane	0.857	0.86	-	-0.4	20	94	0
Halothane	0.351	0.355	-	-1.1	20	96	0
Acrylonitrile	0.077	0.074	-	3.9	20	92	0
Ethyl tert-butyl ether	1.11	1.103	-	0.6	20	93	0
Vinyl acetate	0.711	0.705	-	0.8	20	92	0
cis-1,2-Dichloroethene	0.492	0.486	-	1.2	20	94	0
2,2-Dichloropropane	0.743	0.752	-	-1.2	20	96	0
Bromochloromethane	0.189	0.186	-	1.6	20	93	0
Cyclohexane	0.831	0.904	-	-8.8	20	95	0
Chloroform	0.764	0.769	-	-0.7	20	96	0
Ethyl acetate	0.221	0.21	-	5	20	94	0
Carbon tetrachloride	0.62	0.63	-	-1.6	20	96	0
Tetrahydrofuran	0.062	0.058	-	6.5	20	90	0
Dibromofluoromethane	0.22	0.22	-	0	20	94	0
1,1,1-Trichloroethane	0.713	0.736	-	-3.2	20	96	0
2-Butanone	10	8.749	-	12.5	20	88	0
1,1-Dichloropropene	0.669	0.684	-	-2.2	20	96	0
Benzene	1.974	1.927	-	2.4	20	94	0
tert-Amyl methyl ether	0.964	0.942	-	2.3	20	93	0
1,2-Dichloroethane-d4	0.244	0.242	-	0.8	20	94	0
1,2-Dichloroethane	0.483	0.473	-	2.1	20	94	0
Methyl cyclohexane	0.858	0.938	-	-9.3	20	95	0
Trichloroethene	0.492	0.49	-	0.4	20	96	0
Dibromomethane	0.201	0.193	-	4	20	94	0
1,2-Dichloropropane	0.46	0.454	-	1.3	20	92	0

* Value outside of QC limits.



**Continuing Calibration
Form 7**

Client :	FSL Associates	Lab Number :	L1801514
Project Name :	CUMMINGS BEVERLY	Project Number :	
Instrument ID :	QUIMBY	Calibration Date :	01/17/18 14:59
Lab File ID :	VQ180117N01	Init. Calib. Date(s) :	01/16/18 01/16/18
Sample No :	WG1081757-2	Init. Calib. Times :	10:14 15:43
Channel :			

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
2-Chloroethyl vinyl ether	0.157	0.152	-	3.2	20	89	0
Bromodichloromethane	0.546	0.533	-	2.4	20	93	0
1,4-Dioxane	0.00184	0.00161*	-	12.5	20	80	0
cis-1,3-Dichloropropene	0.732	0.683	-	6.7	20	92	0
Chlorobenzene-d5	1	1	-	0	20	93	0
Toluene-d8	1.338	1.332	-	0.4	20	92	0
Toluene	1.692	1.714	-	-1.3	20	95	0
4-Methyl-2-pentanone	0.101	0.098*	-	3	20	92	0
Tetrachloroethene	0.688	0.718	-	-4.4	20	97	0
trans-1,3-Dichloropropene	0.821	0.745	-	9.3	20	92	0
Ethyl methacrylate	0.455	0.435	-	4.4	20	92	0
1,1,2-Trichloroethane	0.325	0.322	-	0.9	20	93	0
Chlorodibromomethane	0.45	0.43	-	4.4	20	92	0
1,3-Dichloropropane	0.724	0.713	-	1.5	20	94	0
1,2-Dibromoethane	0.367	0.351	-	4.4	20	92	0
2-Hexanone	10	8.278	-	17.2	20	89	0
Chlorobenzene	1.752	1.758	-	-0.3	20	94	0
Ethylbenzene	3.199	3.325	-	-3.9	20	95	0
1,1,2-Tetrachloroethane	0.561	0.553	-	1.4	20	93	0
p/m Xylene	1.2	1.236	-	-3	20	94	0
o Xylene	1.099	1.134	-	-3.2	20	94	0
Styrene	1.73	1.79	-	-3.5	20	92	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	94	0
Bromoform	0.508	0.491	-	3.3	20	92	0
Isopropylbenzene	6.519	6.964	-	-6.8	20	94	0
4-Bromofluorobenzene	1.019	1.016	-	0.3	20	93	0
Bromobenzene	1.464	1.478	-	-1	20	94	0
n-Propylbenzene	7.346	7.774	-	-5.8	20	94	0
1,4-Dichlorobutane	1.248	1.247	-	0.1	20	93	0
1,1,2,2-Tetrachloroethane	0.804	0.789	-	1.9	20	93	0
4-Ethyltoluene	5.789	5.903	-	-2	20	93	0
2-Chlorotoluene	4.829	4.914	-	-1.8	20	91	0
1,3,5-Trimethylbenzene	4.655	4.864	-	-4.5	20	95	0
1,2,3-Trichloropropane	0.698	0.693	-	0.7	20	93	0
trans-1,4-Dichloro-2-butene	0.237	0.221	-	6.8	20	91	0
4-Chlorotoluene	4.384	4.413	-	-0.7	20	92	0
tert-Butylbenzene	4.557	4.696	-	-3.1	20	93	0
1,2,4-Trimethylbenzene	4.278	4.367	-	-2.1	20	94	0
sec-Butylbenzene	6.139	6.503	-	-5.9	20	94	0
p-Isopropyltoluene	5.344	5.538	-	-3.6	20	94	0
1,3-Dichlorobenzene	2.803	2.787	-	0.6	20	94	0
1,4-Dichlorobenzene	2.707	2.666	-	1.5	20	94	0
p-Diethylbenzene	2.97	3.02	-	-1.7	20	94	0
n-Butylbenzene	4.336	4.454	-	-2.7	20	93	0
1,2-Dichlorobenzene	2.411	2.395	-	0.7	20	94	0

* Value outside of QC limits.



Continuing Calibration Form 7

Client	: FSL Associates	Lab Number	: L1801514
Project Name	: CUMMINGS BEVERLY	Project Number	:
Instrument ID	: QUIMBY	Calibration Date	: 01/17/18 14:59
Lab File ID	: VQ180117N01	Init. Calib. Date(s)	: 01/16/18 01/16/18
Sample No	: WG1081757-2	Init. Calib. Times	: 10:14 15:43
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2,4,5-Tetramethylbenzene	2.969	3.247	-	-9.4	20	102	0
1,2-Dibromo-3-chloropropan	0.135	0.121	-	10.4	20	86	0
1,3,5-Trichlorobenzene	1.558	1.556	-	0.1	20	95	0
Hexachlorobutadiene	0.847	0.85	-	-0.4	20	96	0
1,2,4-Trichlorobenzene	1.262	1.24	-	1.7	20	96	0
Naphthalene	1.913	1.847	-	3.5	20	96	0
1,2,3-Trichlorobenzene	1.074	1.057	-	1.6	20	96	0

* Value outside of QC limits.



**Continuing Calibration
Form 7**

Client	: FSL Associates	Lab Number	: L1801514		
Project Name	: CUMMINGS BEVERLY	Project Number	:		
Instrument ID	: QUIMBY	Calibration Date	: 01/19/18 04:06		
Lab File ID	: VQ180119A01	Init. Calib. Date(s)	: 01/16/18	01/16/18	
Sample No	: WG1082218-2	Init. Calib. Times	: 10:14	15:43	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	84	0
Dichlorodifluoromethane	0.433	0.463	-	-6.9	20	88	0
Chloromethane	0.578	0.569	-	1.6	20	83	0
Vinyl chloride	0.503	0.496	-	1.4	20	82	0
Bromomethane	10	10.277	-	-2.8	20	85	0
Chloroethane	0.277	0.275	-	0.7	20	84	0
Trichlorofluoromethane	0.605	0.667	-	-10.2	20	91	0
Ethyl ether	0.157	0.145	-	7.6	20	80	0
1,1-Dichloroethene	0.351	0.354	-	-0.9	20	84	0
Carbon disulfide	0.968	0.949	-	2	20	81	0
Methylene chloride	0.415	0.417	-	-0.5	20	87	0
Acetone	10	10.599	-	-6	20	89	0
trans-1,2-Dichloroethene	0.458	0.46	-	-0.4	20	86	0
Methyl tert-butyl ether	0.804	0.773	-	3.9	20	84	0
Diisopropyl ether	1.337	1.285	-	3.9	20	80	0
1,1-Dichloroethane	0.857	0.851	-	0.7	20	84	0
Ethyl tert-butyl ether	1.11	1.081	-	2.6	20	83	0
cis-1,2-Dichloroethene	0.492	0.496	-	-0.8	20	87	0
2,2-Dichloropropane	0.743	0.774	-	-4.2	20	90	0
Bromochloromethane	0.189	0.189	-	0	20	86	0
Chloroform	0.764	0.786	-	-2.9	20	89	0
Carbon tetrachloride	0.62	0.662	-	-6.8	20	92	0
Tetrahydrofuran	0.062	0.053	-	14.5	20	75	0
Dibromofluoromethane	0.22	0.219	-	0.5	20	85	0
1,1,1-Trichloroethane	0.713	0.767	-	-7.6	20	91	0
2-Butanone	10	9.084	-	9.2	20	83	0
1,1-Dichloropropene	0.669	0.689	-	-3	20	87	0
Benzene	1.974	1.969	-	0.3	20	87	0
tert-Amyl methyl ether	0.964	0.941	-	2.4	20	84	0
1,2-Dichloroethane-d4	0.244	0.236	-	3.3	20	83	0
1,2-Dichloroethane	0.483	0.488	-	-1	20	88	0
Trichloroethene	0.492	0.508	-	-3.3	20	90	0
Dibromomethane	0.201	0.196	-	2.5	20	86	0
1,2-Dichloropropane	0.46	0.449	-	2.4	20	83	0
Bromodichloromethane	0.546	0.549	-	-0.5	20	87	0
1,4-Dioxane	0.00184	0.0017*	-	7.6	20	77	0
cis-1,3-Dichloropropene	0.732	0.705	-	3.7	20	86	0
Chlorobenzene-d5	1	1	-	0	20	86	0
Toluene-d8	1.338	1.303	-	2.6	20	83	0
Toluene	1.692	1.754	-	-3.7	20	89	0
4-Methyl-2-pentanone	0.101	0.089*	-	11.9	20	78	0
Tetrachloroethene	0.688	0.747	-	-8.6	20	93	0
trans-1,3-Dichloropropene	0.821	0.759	-	7.6	20	86	0
1,1,2-Trichloroethane	0.325	0.32	-	1.5	20	85	0
Chlorodibromomethane	0.45	0.443	-	1.6	20	88	0

* Value outside of QC limits.



**Continuing Calibration
Form 7**

Client :	FSL Associates	Lab Number :	L1801514
Project Name :	CUMMINGS BEVERLY	Project Number :	
Instrument ID :	QUIMBY	Calibration Date :	01/19/18 04:06
Lab File ID :	VQ180119A01	Init. Calib. Date(s) :	01/16/18 01/16/18
Sample No :	WG1082218-2	Init. Calib. Times :	10:14 15:43
Channel :			

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.724	0.708	-	2.2	20	86	0
1,2-Dibromoethane	0.367	0.354	-	3.5	20	86	0
2-Hexanone	10	8	-	20	20	80	0
Chlorobenzene	1.752	1.808	-	-3.2	20	89	0
Ethylbenzene	3.199	3.401	-	-6.3	20	89	0
1,1,1,2-Tetrachloroethane	0.561	0.586	-	-4.5	20	91	0
p/m Xylene	1.2	1.265	-	-5.4	20	89	0
o Xylene	1.099	1.157	-	-5.3	20	88	0
Styrene	1.73	1.823	-	-5.4	20	86	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	86	0
Bromoform	0.508	0.515	-	-1.4	20	89	0
Isopropylbenzene	6.519	7.18	-	-10.1	20	89	0
4-Bromofluorobenzene	1.019	1.01	-	0.9	20	85	0
Bromobenzene	1.464	1.563	-	-6.8	20	91	0
n-Propylbenzene	7.346	7.91	-	-7.7	20	87	0
1,1,2,2-Tetrachloroethane	0.804	0.785	-	2.4	20	85	0
2-Chlorotoluene	4.829	5.068	-	-4.9	20	86	0
1,3,5-Trimethylbenzene	4.655	5.114	-	-9.9	20	91	0
1,2,3-Trichloropropane	0.698	0.692	-	0.9	20	85	0
4-Chlorotoluene	4.384	4.574	-	-4.3	20	87	0
tert-Butylbenzene	4.557	4.844	-	-6.3	20	88	0
1,2,4-Trimethylbenzene	4.278	4.591	-	-7.3	20	90	0
sec-Butylbenzene	6.139	6.646	-	-8.3	20	87	0
p-Isopropyltoluene	5.344	5.701	-	-6.7	20	88	0
1,3-Dichlorobenzene	2.803	2.947	-	-5.1	20	91	0
1,4-Dichlorobenzene	2.707	2.801	-	-3.5	20	90	0
n-Butylbenzene	4.336	4.592	-	-5.9	20	88	0
1,2-Dichlorobenzene	2.411	2.51	-	-4.1	20	90	0
1,2-Dibromo-3-chloropropan	0.135	0.12	-	11.1	20	78	0
Hexachlorobutadiene	0.847	0.927	-	-9.4	20	96	0
1,2,4-Trichlorobenzene	1.262	1.344	-	-6.5	20	95	0
Naphthalene	1.913	1.913	-	0	20	91	0
1,2,3-Trichlorobenzene	1.074	1.123	-	-4.6	20	93	0

* Value outside of QC limits.





ANALYTICAL REPORT

Lab Number:	L1801518
Client:	FSL Associates 358 Chestnut Hill Ave. Brighton, MA 02135
ATTN:	Bruce Hoskins
Phone:	(617) 232-0001
Project Name:	CUMMINGS ELLIOT LANDING PARCEL
Project Number:	Not Specified
Report Date:	01/23/18

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1801518-01	FSL-100	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 12:30	01/16/18
L1801518-02	FSL-200	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 13:20	01/16/18
L1801518-03	FSL-300	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 14:05	01/16/18
L1801518-04	DUPLICATE	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 12:30	01/16/18
L1801518-05	TRIP BLANK	WATER	181 ELLIOTT STREET, BEVERLY, MA	01/15/18 00:00	01/16/18

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

In reference to question H:

The initial calibration, associated with L1801518-01, -02, -04 and -05, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0018), as well as the average response factor for 1,4-dioxane.

The initial calibration, associated with L1801518-03, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0021), as well as the average response factor for 1,4-dioxane. In addition, a quadratic fit was utilized for chloroethane. The initial calibration verification, associated with L1801518-03, is outside acceptance criteria for carbon disulfide (133%).

The continuing calibration standards, associated with L1801518-01 through -05, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. A copy of the continuing calibration standards is included as an addendum to this report.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Amita Naik

Title: Technical Director/Representative

Date: 01/23/18

ORGANICS



VOLATILES



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-01	Date Collected:	01/15/18 12:30
Client ID:	FSL-100	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	97,8260C		
Analytical Date:	01/18/18 14:49		
Analyst:	MKS		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-01	Date Collected:	01/15/18 12:30		
Client ID:	FSL-100	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	ND	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-01	Date Collected:	01/15/18 12:30
Client ID:	FSL-100	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	99		70-130

Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID: L1801518-02 Date Collected: 01/15/18 13:20
 Client ID: FSL-200 Date Received: 01/16/18
 Sample Location: 181 ELLIOTT STREET, BEVERLY, MA Field Prep: Not Specified

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 01/18/18 15:19
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-02	Date Collected:	01/15/18 13:20		
Client ID:	FSL-200	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	ND	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-02	Date Collected:	01/15/18 13:20
Client ID:	FSL-200	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	101		70-130

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-03	Date Collected:	01/15/18 14:05
Client ID:	FSL-300	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	97,8260C		
Analytical Date:	01/18/18 22:01		
Analyst:	KD		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-03	Date Collected:	01/15/18 14:05		
Client ID:	FSL-300	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	ND	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-03	Date Collected:	01/15/18 14:05
Client ID:	FSL-300	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	97		70-130

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-04	Date Collected:	01/15/18 12:30
Client ID:	DUPLICATE	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	97,8260C		
Analytical Date:	01/18/18 15:49		
Analyst:	MKS		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-04	Date Collected:	01/15/18 12:30		
Client ID:	DUPLICATE	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	ND	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-04	Date Collected:	01/15/18 12:30
Client ID:	DUPLICATE	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	99		70-130

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-05	Date Collected:	01/15/18 00:00
Client ID:	TRIP BLANK	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	97,8260C		
Analytical Date:	01/18/18 11:49		
Analyst:	MKS		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-05	Date Collected:	01/15/18 00:00		
Client ID:	TRIP BLANK	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab					
1,3-Dichlorobenzene	ND	ug/l	1.0	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	1
p/m-Xylene	ND	ug/l	2.0	--	1
o-Xylene	ND	ug/l	1.0	--	1
Xylene (Total)	ND	ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	1
Dibromomethane	ND	ug/l	2.0	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	1
Styrene	ND	ug/l	1.0	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	1
Acetone	ND	ug/l	5.0	--	1
Carbon disulfide	ND	ug/l	2.0	--	1
2-Butanone	ND	ug/l	5.0	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	1
2-Hexanone	ND	ug/l	5.0	--	1
Bromochloromethane	ND	ug/l	2.0	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	1
Bromobenzene	ND	ug/l	2.0	--	1
n-Butylbenzene	ND	ug/l	2.0	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	1
Isopropylbenzene	ND	ug/l	2.0	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	1
Naphthalene	ND	ug/l	2.0	--	1
n-Propylbenzene	ND	ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	1

Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-05	Date Collected:	01/15/18 00:00
Client ID:	TRIP BLANK	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND	ug/l	2.0	--	--	1
Isopropyl Ether	ND	ug/l	2.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0	--	--	1
1,4-Dioxane	ND	ug/l	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	99		70-130

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/18/18 07:50
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-02,04-05			Batch:	WG1081984-5
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/18/18 07:50
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-02,04-05			Batch:	WG1081984-5
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/18/18 07:50
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-02,04-05			Batch:	WG1081984-5
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
Ethyl Acetate	ND		ug/l	10	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	2.0	--
Iodomethane	ND		ug/l	10	--
tert-Butyl Alcohol	ND		ug/l	10	--
Vinyl acetate	ND		ug/l	2.5	--
Acrolein	ND		ug/l	10	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Ethyl methacrylate	ND		ug/l	5.0	--
Methyl cyclohexane	ND		ug/l	10	--
Cyclohexane	ND		ug/l	10	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
1,4-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/18/18 07:50
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-02,04-05		Batch:	WG1081984-5	
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Halothane	ND		ug/l	2.0	--

Tentatively Identified Compounds

No Tentatively Identified Compounds ND ug/l

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	98		70-130

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/18/18 20:31
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	03	Batch:	WG1082077-5		
Methylene chloride	ND	ug/l	2.0	--	
1,1-Dichloroethane	ND	ug/l	1.0	--	
Chloroform	ND	ug/l	1.0	--	
Carbon tetrachloride	ND	ug/l	1.0	--	
1,2-Dichloropropane	ND	ug/l	1.0	--	
Dibromochloromethane	ND	ug/l	1.0	--	
1,1,2-Trichloroethane	ND	ug/l	1.0	--	
Tetrachloroethene	ND	ug/l	1.0	--	
Chlorobenzene	ND	ug/l	1.0	--	
Trichlorofluoromethane	ND	ug/l	2.0	--	
1,2-Dichloroethane	ND	ug/l	1.0	--	
1,1,1-Trichloroethane	ND	ug/l	1.0	--	
Bromodichloromethane	ND	ug/l	1.0	--	
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	
1,1-Dichloropropene	ND	ug/l	2.0	--	
Bromoform	ND	ug/l	2.0	--	
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	
Benzene	ND	ug/l	0.50	--	
Toluene	ND	ug/l	1.0	--	
Ethylbenzene	ND	ug/l	1.0	--	
Chloromethane	ND	ug/l	2.0	--	
Bromomethane	ND	ug/l	2.0	--	
Vinyl chloride	ND	ug/l	1.0	--	
Chloroethane	ND	ug/l	2.0	--	
1,1-Dichloroethene	ND	ug/l	1.0	--	
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	
Trichloroethene	ND	ug/l	1.0	--	



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/18/18 20:31
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	03	Batch:	WG1082077-5		
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/18/18 20:31
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	03	Batch:	WG1082077-5		
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
Ethyl Acetate	ND		ug/l	10	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	2.0	--
Iodomethane	ND		ug/l	10	--
tert-Butyl Alcohol	ND		ug/l	10	--
Vinyl acetate	ND		ug/l	2.5	--
Acrolein	ND		ug/l	10	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Ethyl methacrylate	ND		ug/l	5.0	--
Methyl cyclohexane	ND		ug/l	10	--
Cyclohexane	ND		ug/l	10	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
1,4-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/18/18 20:31
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	03	Batch:	WG1082077-5		
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Halothane	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG1081984-3 WG1081984-4								
Methylene chloride	94		94		70-130	0		20
1,1-Dichloroethane	95		96		70-130	1		20
Chloroform	96		98		70-130	2		20
Carbon tetrachloride	97		98		70-130	1		20
1,2-Dichloropropane	94		97		70-130	3		20
Dibromochloromethane	93		96		70-130	3		20
1,1,2-Trichloroethane	94		98		70-130	4		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	98		100		70-130	2		20
Trichlorofluoromethane	100		100		70-130	0		20
1,2-Dichloroethane	95		98		70-130	3		20
1,1,1-Trichloroethane	99		100		70-130	1		20
Bromodichloromethane	95		97		70-130	2		20
trans-1,3-Dichloropropene	88		91		70-130	3		20
cis-1,3-Dichloropropene	91		94		70-130	3		20
1,1-Dichloropropene	97		97		70-130	0		20
Bromoform	96		100		70-130	4		20
1,1,2,2-Tetrachloroethane	95		99		70-130	4		20
Benzene	94		96		70-130	2		20
Toluene	98		99		70-130	1		20
Ethylbenzene	100		100		70-130	0		20
Chloromethane	94		94		70-130	0		20
Bromomethane	120		120		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG1081984-3 WG1081984-4								
Vinyl chloride	97		97		70-130	0		20
Chloroethane	96		95		70-130	1		20
1,1-Dichloroethene	96		96		70-130	0		20
trans-1,2-Dichloroethene	96		96		70-130	0		20
Trichloroethene	97		98		70-130	1		20
1,2-Dichlorobenzene	98		99		70-130	1		20
1,3-Dichlorobenzene	99		99		70-130	0		20
1,4-Dichlorobenzene	97		98		70-130	1		20
Methyl tert butyl ether	92		97		70-130	5		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	96		97		70-130	1		20
Dibromomethane	92		96		70-130	4		20
1,2,3-Trichloropropane	97		100		70-130	3		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	100		100		70-130	0		20
Acetone	110		95		70-130	15		20
Carbon disulfide	95		96		70-130	1		20
2-Butanone	92		87		70-130	6		20
4-Methyl-2-pentanone	86		91		70-130	6		20
2-Hexanone	80		79		70-130	1		20
Bromochloromethane	94		97		70-130	3		20
Tetrahydrofuran	80		87		70-130	8		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG1081984-3 WG1081984-4								
2,2-Dichloropropane	97		98		70-130	1		20
1,2-Dibromoethane	93		98		70-130	5		20
1,3-Dichloropropane	94		99		70-130	5		20
1,1,1,2-Tetrachloroethane	98		100		70-130	2		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	96		96		70-130	0		20
sec-Butylbenzene	99		100		70-130	1		20
tert-Butylbenzene	98		99		70-130	1		20
o-Chlorotoluene	99		99		70-130	0		20
p-Chlorotoluene	98		99		70-130	1		20
1,2-Dibromo-3-chloropropane	85		91		70-130	7		20
Hexachlorobutadiene	99		96		70-130	3		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	98		98		70-130	0		20
Naphthalene	94		97		70-130	3		20
n-Propylbenzene	100		100		70-130	0		20
1,2,3-Trichlorobenzene	96		98		70-130	2		20
1,2,4-Trichlorobenzene	97		96		70-130	1		20
1,3,5-Trimethylbenzene	100		100		70-130	0		20
1,2,4-Trimethylbenzene	99		98		70-130	1		20
Ethyl ether	90		93		70-130	3		20
Isopropyl Ether	93		96		70-130	3		20
Ethyl-Tert-Butyl-Ether	93		98		70-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG1081984-3 WG1081984-4								
Tertiary-Amyl Methyl Ether	93		97		70-130	4		20
1,4-Dioxane	68	Q	76		70-130	11		20
Ethyl Acetate	85		91		70-130	7		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	100		100		70-130	0		20
Iodomethane	75		79		70-130	5		20
tert-Butyl Alcohol	74		82		70-130	10		20
Vinyl acetate	92		96		70-130	4		20
Acrolein	93		100		70-130	7		20
2-Chloroethylvinyl ether	89		92		70-130	3		20
Ethyl methacrylate	88		92		70-130	4		20
Methyl cyclohexane	100		100		70-130	0		20
Cyclohexane	97		98		70-130	1		20
trans-1,4-Dichloro-2-butene	86		92		70-130	7		20
1,4-Diethylbenzene	96		96		70-130	0		20
4-Ethyltoluene	98		98		70-130	0		20
1,2,4,5-Tetramethylbenzene	110		110		70-130	0		20
1,4-Dichlorobutane	97		100		70-130	3		20
Acrylonitrile	87		91		70-130	4		20
Halothane	96		98		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG1081984-3 WG1081984-4								
Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual				Acceptance Criteria
1,2-Dichloroethane-d4	97		99					70-130
Toluene-d8	99		99					70-130
4-Bromofluorobenzene	102		101					70-130
Dibromofluoromethane	100		101					70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG1082077-3 WG1082077-4								
Methylene chloride	94		96		70-130	2		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	91		94		70-130	3		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	94		100		70-130	6		20
1,1,2-Trichloroethane	110		110		70-130	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	110		110		70-130	0		20
Trichlorofluoromethane	86		83		70-130	4		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	100		100		70-130	0		20
Bromodichloromethane	97		98		70-130	1		20
trans-1,3-Dichloropropene	99		100		70-130	1		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
1,1-Dichloropropene	110		110		70-130	0		20
Bromoform	84		80		70-130	5		20
1,1,2,2-Tetrachloroethane	110		110		70-130	0		20
Benzene	110		110		70-130	0		20
Toluene	110		110		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
Chloromethane	100		99		70-130	1		20
Bromomethane	95		94		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG1082077-3 WG1082077-4								
Vinyl chloride	110		110		70-130	0		20
Chloroethane	69	Q	68	Q	70-130	1		20
1,1-Dichloroethene	100		100		70-130	0		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	100		100		70-130	0		20
1,2-Dichlorobenzene	110		110		70-130	0		20
1,3-Dichlorobenzene	100		110		70-130	10		20
1,4-Dichlorobenzene	110		110		70-130	0		20
Methyl tert butyl ether	83		82		70-130	1		20
p/m-Xylene	105		110		70-130	5		20
o-Xylene	100		105		70-130	5		20
cis-1,2-Dichloroethene	110		120		70-130	9		20
Dibromomethane	100		110		70-130	10		20
1,2,3-Trichloropropane	100		110		70-130	10		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	100		100		70-130	0		20
Acetone	78		70		70-130	11		20
Carbon disulfide	94		94		70-130	0		20
2-Butanone	92		89		70-130	3		20
4-Methyl-2-pentanone	91		97		70-130	6		20
2-Hexanone	82		82		70-130	0		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	79		89		70-130	12		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG1082077-3 WG1082077-4								
2,2-Dichloropropane	100		100		70-130	0		20
1,2-Dibromoethane	110		110		70-130	0		20
1,3-Dichloropropane	110		110		70-130	0		20
1,1,1,2-Tetrachloroethane	99		100		70-130	1		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	110		110		70-130	0		20
sec-Butylbenzene	100		110		70-130	10		20
tert-Butylbenzene	110		110		70-130	0		20
o-Chlorotoluene	110		110		70-130	0		20
p-Chlorotoluene	110		110		70-130	0		20
1,2-Dibromo-3-chloropropane	92		99		70-130	7		20
Hexachlorobutadiene	100		120		70-130	18		20
Isopropylbenzene	110		110		70-130	0		20
p-Isopropyltoluene	110		110		70-130	0		20
Naphthalene	97		100		70-130	3		20
n-Propylbenzene	100		110		70-130	10		20
1,2,3-Trichlorobenzene	100		110		70-130	10		20
1,2,4-Trichlorobenzene	100		110		70-130	10		20
1,3,5-Trimethylbenzene	110		110		70-130	0		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20
Ethyl ether	98		94		70-130	4		20
Isopropyl Ether	97		99		70-130	2		20
Ethyl-Tert-Butyl-Ether	110		110		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG1082077-3 WG1082077-4								
Tertiary-Amyl Methyl Ether	100		100		70-130	0		20
1,4-Dioxane	94		92		70-130	2		20
Ethyl Acetate	93		90		70-130	3		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	99		100		70-130	1		20
Iodomethane	46	Q	52	Q	70-130	12		20
tert-Butyl Alcohol	82		80		70-130	2		20
Vinyl acetate	93		93		70-130	0		20
Acrolein	80		94		70-130	16		20
2-Chloroethylvinyl ether	88		94		70-130	7		20
Ethyl methacrylate	94		96		70-130	2		20
Methyl cyclohexane	110		110		70-130	0		20
Cyclohexane	110		110		70-130	0		20
trans-1,4-Dichloro-2-butene	120		120		70-130	0		20
1,4-Diethylbenzene	110		120		70-130	9		20
4-Ethyltoluene	110		110		70-130	0		20
1,2,4,5-Tetramethylbenzene	120		120		70-130	0		20
1,4-Dichlorobutane	90		92		70-130	2		20
Acrylonitrile	86		89		70-130	3		20
Halothane	100		100		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	<i>LCS</i> %Recovery	Qual	<i>LCSD</i> %Recovery	Qual	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	Qual	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG1082077-3 WG1082077-4								
Surrogate	<i>LCS</i> %Recovery	Qual	<i>LCSD</i> %Recovery	Qual	<i>Acceptance</i> <i>Criteria</i>			
1,2-Dichloroethane-d4	91		90		70-130			
Toluene-d8	105		103		70-130			
4-Bromofluorobenzene	105		105		70-130			
Dibromofluoromethane	98		97		70-130			

PETROLEUM HYDROCARBONS



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-01	Date Collected:	01/15/18 12:30
Client ID:	FSL-100	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/18/18 17:25		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	85		70-130
2,5-Dibromotoluene-FID	84		70-130



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-01	Date Collected:	01/15/18 12:30		
Client ID:	FSL-100	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/20/18 22:18	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-01	Date Collected:	01/15/18 12:30
Client ID:	FSL-100	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	60		40-140
o-Terphenyl	76		40-140
2-Fluorobiphenyl	90		40-140
2-Bromonaphthalene	85		40-140
O-Terphenyl-MS	76		40-140



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-02	Date Collected:	01/15/18 13:20
Client ID:	FSL-200	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/18/18 18:04		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	76		70-130
2,5-Dibromotoluene-FID	77		70-130



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-02	Date Collected:	01/15/18 13:20		
Client ID:	FSL-200	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/20/18 23:03	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-02	Date Collected:	01/15/18 13:20
Client ID:	FSL-200	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	58		40-140
o-Terphenyl	76		40-140
2-Fluorobiphenyl	91		40-140
2-Bromonaphthalene	83		40-140
O-Terphenyl-MS	81		40-140



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-03	Date Collected:	01/15/18 14:05
Client ID:	FSL-300	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/18/18 18:44		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	79		70-130
2,5-Dibromotoluene-FID	77		70-130



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-03	Date Collected:	01/15/18 14:05		
Client ID:	FSL-300	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/20/18 23:49	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	138		ug/l	100	--	1
C11-C22 Aromatics	110		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	110		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-03	Date Collected:	01/15/18 14:05
Client ID:	FSL-300	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	66		40-140
o-Terphenyl	82		40-140
2-Fluorobiphenyl	88		40-140
2-Bromonaphthalene	81		40-140
O-Terphenyl-MS	87		40-140



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-04	Date Collected:	01/15/18 12:30
Client ID:	DUPLICATE	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/18/18 19:24		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	76		70-130
2,5-Dibromotoluene-FID	73		70-130



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-04	Date Collected:	01/15/18 12:30		
Client ID:	DUPLICATE	Date Received:	01/16/18		
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified		
Matrix:	Water	Extraction Method:	EPA 3510C		
Analytical Method:	98,EPH-04-1.1	Extraction Date:	01/18/18 11:19		
Analytical Date:	01/21/18 00:35	Cleanup Method1:	EPH-04-1		
Analyst:	DG	M.S. Analyst:	KL	Cleanup Date1:	01/19/18

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



Project Name: CUMMINGS ELLIOT LANDING PARCEL

Lab Number: L1801518

Project Number: Not Specified

Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-04	Date Collected:	01/15/18 12:30
Client ID:	DUPLICATE	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	53		40-140
o-Terphenyl	75		40-140
2-Fluorobiphenyl	94		40-140
2-Bromonaphthalene	89		40-140
O-Terphenyl-MS	77		40-140



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

SAMPLE RESULTS

Lab ID:	L1801518-05	Date Collected:	01/15/18 00:00
Client ID:	TRIP BLANK	Date Received:	01/16/18
Sample Location:	181 ELLIOTT STREET, BEVERLY, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	01/18/18 16:45		
Analyst:	MZ		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	75		70-130
2,5-Dibromotoluene-FID	76		70-130



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method:	98,EPH-04-1.1	Extraction Method:	EPA 3510C
Analytical Date:	01/20/18 14:43	M.S. Analytical Date:	01/20/18 12:03
Analyst:	DG	M.S. Analyst:	KL
		Cleanup Method:	EPH-04-1
		Cleanup Date:	01/19/18

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 01-04 Batch: WG1081927-1					
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--
Naphthalene	ND		ug/l	0.400	--
2-Methylnaphthalene	ND		ug/l	0.400	--
Acenaphthylene	ND		ug/l	0.400	--
Acenaphthene	ND		ug/l	0.400	--
Fluorene	ND		ug/l	0.400	--
Phenanthrene	ND		ug/l	0.400	--
Anthracene	ND		ug/l	0.400	--
Fluoranthene	ND		ug/l	0.400	--
Pyrene	ND		ug/l	0.400	--
Benzo(a)anthracene	ND		ug/l	0.400	--
Chrysene	ND		ug/l	0.400	--
Benzo(b)fluoranthene	ND		ug/l	0.400	--
Benzo(k)fluoranthene	ND		ug/l	0.400	--
Benzo(a)pyrene	ND		ug/l	0.200	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--
Benzo(ghi)perylene	ND		ug/l	0.400	--

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method:	98,EPH-04-1.1	Extraction Method:	EPA 3510C
Analytical Date:	01/20/18 14:43	Extraction Date:	01/18/18 11:19
Analyst:	DG	Cleanup Method:	EPH-04-1
		Cleanup Date:	01/19/18

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 01-04 Batch: WG1081927-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	64		40-140
o-Terphenyl	69		40-140
2-Fluorobiphenyl	76		40-140
2-Bromonaphthalene	69		40-140
O-Terphenyl-MS	86		40-140

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 01/18/18 12:07
Analyst: MZ

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-05			Batch:	WG1082219-4
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--
Benzene	ND		ug/l	2.00	--
Toluene	ND		ug/l	2.00	--
Ethylbenzene	ND		ug/l	2.00	--
p/m-Xylene	ND		ug/l	2.00	--
o-Xylene	ND		ug/l	2.00	--
Methyl tert butyl ether	ND		ug/l	3.00	--
Naphthalene	ND		ug/l	4.00	--

Surrogate	%Recovery	Qualifier	Acceptance
			Criteria
2,5-Dibromotoluene-PID	82		70-130
2,5-Dibromotoluene-FID	81		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-04 Batch: WG1081927-2 WG1081927-3								
C9-C18 Aliphatics	78		75		40-140	4		25
C19-C36 Aliphatics	80		79		40-140	1		25
C11-C22 Aromatics	88		84		40-140	5		25
Naphthalene	82		74		40-140	10		25
2-Methylnaphthalene	76		61		40-140	22		25
Acenaphthylene	74		72		40-140	3		25
Acenaphthene	95		87		40-140	9		25
Fluorene	85		77		40-140	10		25
Phenanthrene	88		80		40-140	10		25
Anthracene	91		85		40-140	7		25
Fluoranthene	88		80		40-140	10		25
Pyrene	90		84		40-140	7		25
Benzo(a)anthracene	86		77		40-140	11		25
Chrysene	93		84		40-140	10		25
Benzo(b)fluoranthene	92		68		40-140	30	Q	25
Benzo(k)fluoranthene	89		66		40-140	30	Q	25
Benzo(a)pyrene	87		80		40-140	8		25
Indeno(1,2,3-cd)Pyrene	100		71		40-140	34	Q	25
Dibenzo(a,h)anthracene	107		77		40-140	33	Q	25
Benzo(ghi)perylene	93		72		40-140	25		25
Nonane (C9)	64		59		30-140	8		25
Decane (C10)	70		66		40-140	6		25
Dodecane (C12)	75		73		40-140	3		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-04 Batch: WG1081927-2 WG1081927-3								
Tetradecane (C14)	77		76		40-140	1		25
Hexadecane (C16)	77		78		40-140	1		25
Octadecane (C18)	77		78		40-140	1		25
Nonadecane (C19)	76		77		40-140	1		25
Eicosane (C20)	76		77		40-140	1		25
Docosane (C22)	76		77		40-140	1		25
Tetracosane (C24)	76		76		40-140	0		25
Hexacosane (C26)	75		76		40-140	1		25
Octacosane (C28)	75		76		40-140	1		25
Triacontane (C30)	74		76		40-140	3		25
Hexatriacontane (C36)	74		76		40-140	3		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	72		70		40-140
o-Terphenyl	90		80		40-140
2-Fluorobiphenyl	95		82		40-140
2-Bromonaphthalene	91		72		40-140
O-Terphenyl-MS	80		75		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-05 Batch: WG1082219-2 WG1082219-3								
C5-C8 Aliphatics	79		80		70-130	1		25
C9-C12 Aliphatics	95		95		70-130	0		25
C9-C10 Aromatics	94		95		70-130	1		25
Benzene	84		84		70-130	1		25
Toluene	86		87		70-130	1		25
Ethylbenzene	94		94		70-130	1		25
p/m-Xylene	92		93		70-130	1		25
o-Xylene	90		91		70-130	1		25
Methyl tert butyl ether	87		87		70-130	1		25
Naphthalene	92		92		70-130	0		25
1,2,4-Trimethylbenzene	94		95		70-130	1		25
Pentane	75		76		70-130	0		25
2-Methylpentane	70		71		70-130	1		25
2,2,4-Trimethylpentane	88		89		70-130	1		25
n-Nonane	90		91		30-130	1		25
n-Decane	96		97		70-130	1		25
n-Butylcyclohexane	100		100		70-130	0		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	85		84		70-130
2,5-Dibromotoluene-FID	85		81		70-130

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Serial_No:01231815:47
Lab Number: L1801518
Report Date: 01/23/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1801518-01A	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-01B	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-01C	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-01D	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-01E	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-01F	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-01G	Amber 1000ml HCl preserved	B	<2	<2	2.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801518-01H	Amber 1000ml HCl preserved	B	<2	<2	2.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801518-02A	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-02B	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-02C	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-02D	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-02E	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-02F	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-02G	Amber 1000ml HCl preserved	B	<2	<2	2.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801518-02H	Amber 1000ml HCl preserved	B	<2	<2	2.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801518-03A	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-03B	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-03C	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-03D	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-03E	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-03F	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-03G	Amber 1000ml HCl preserved	B	<2	<2	2.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)

*Values in parentheses indicate holding time in days

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Serial_No:01231815:47
Lab Number: L1801518
Report Date: 01/23/18

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1801518-03H	Amber 1000ml HCl preserved	B	<2	<2	2.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801518-04A	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-04B	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-04C	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-04D	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-04E	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-04F	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-04G	Amber 1000ml HCl preserved	B	<2	<2	2.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801518-04H	Amber 1000ml HCl preserved	B	<2	<2	2.6	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1801518-05A	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-05B	Vial HCl preserved	B	NA		2.6	Y	Absent		MCP-8260-10(14)
L1801518-05C	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)
L1801518-05D	Vial HCl preserved	B	NA		2.6	Y	Absent		VPH-DELUX-10(14)

*Values in parentheses indicate holding time in days

Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
Report Date: 01/23/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

- Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.
- Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.
- Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.
- Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.
- Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A - Spectra identified as "Aldol Condensation Product".
- B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
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Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedances are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report



Project Name: CUMMINGS ELLIOT LANDING PARCEL
Project Number: Not Specified

Lab Number: L1801518
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REFERENCES

- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**
EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY RECORD

Laboratory:

01/16/18

Alpha

L1801518

**Method Blank Summary
Form 4**

Client	: FSL Associates	Lab Number	: L1801518
Project Name	: CUMMINGS ELLIOT LANDING PARCEL		
Lab Sample ID	: WG1081984-5	Project Number	:
Instrument ID	: QUIMBY		
Matrix	: WATER	Lab File ID	: VQ180118A07
		Analysis Date	: 01/18/18 07:50

Client Sample No.	Lab Sample ID	Analysis Date
WG1081984-3LCS	WG1081984-3	01/18/18 05:50
WG1081984-4LCSD	WG1081984-4	01/18/18 06:20
TRIP BLANK	L1801518-05	01/18/18 11:49
FSL-100	L1801518-01	01/18/18 14:49
FSL-200	L1801518-02	01/18/18 15:19
DUPLICATE	L1801518-04	01/18/18 15:49

**Method Blank Summary
Form 4**

Client	: FSL Associates	Lab Number	: L1801518
Project Name	: CUMMINGS ELLIOT LANDING PARCEL	Project Number	:
Lab Sample ID	: WG1082077-5	Lab File ID	: VJ180118N07
Instrument ID	: JACK		
Matrix	: WATER	Analysis Date	: 01/18/18 20:31

Client Sample No.	Lab Sample ID	Analysis Date
WG1082077-3LCS	WG1082077-3	01/18/18 18:30
WG1082077-4LCSD	WG1082077-4	01/18/18 19:00
FSL-300	L1801518-03	01/18/18 22:01

**Continuing Calibration
Form 7**

Client :	FSL Associates	Lab Number :	L1801518
Project Name :	CUMMINGS ELLIOT LANDING PARCEL	Project Number :	
Instrument ID :	QUIMBY	Calibration Date :	01/18/18 05:50
Lab File ID :	VQ180118A03	Init. Calib. Date(s) :	01/16/18 01/16/18
Sample No :	WG1081984-2	Init. Calib. Times :	10:14 15:43
Channel :			

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	93	0
Dichlorodifluoromethane	0.433	0.435	-	-0.5	20	92	0
Chloromethane	0.578	0.546	-	5.5	20	88	0
Vinyl chloride	0.503	0.486	-	3.4	20	90	0
Bromomethane	10	11.749	-	-17.5	20	107	0
Chloroethane	0.277	0.265	-	4.3	20	90	0
Trichlorofluoromethane	0.605	0.623	-	-3	20	95	0
Ethyl ether	0.157	0.141	-	10.2	20	86	0
1,1-Dichloroethene	0.351	0.338	-	3.7	20	89	0
Carbon disulfide	0.968	0.92	-	5	20	87	0
Freon-113	0.359	0.359	-	0	20	90	0
Iodomethane	0.452	0.338	-	25.2*	20	76	0
Acrolein	10	9.288	-	7.1	20	118	0
Methylene chloride	0.415	0.389	-	6.3	20	90	0
Acetone	10	10.978	-	-9.8	20	103	0
trans-1,2-Dichloroethene	0.458	0.439	-	4.1	20	91	0
Methyl acetate	0.165	0.145	-	12.1	20	81	0
Methyl tert-butyl ether	0.804	0.738	-	8.2	20	89	0
tert-Butyl alcohol	0.016	0.012*	-	25*	20	72	0
Diisopropyl ether	1.337	1.241	-	7.2	20	86	0
1,1-Dichloroethane	0.857	0.817	-	4.7	20	90	0
Halothane	0.351	0.336	-	4.3	20	91	0
Acrylonitrile	0.077	0.067	-	13	20	84	0
Ethyl tert-butyl ether	1.11	1.03	-	7.2	20	87	0
Vinyl acetate	0.711	0.651	-	8.4	20	85	0
cis-1,2-Dichloroethene	0.492	0.471	-	4.3	20	91	0
2,2-Dichloropropane	0.743	0.721	-	3	20	93	0
Bromochloromethane	0.189	0.178	-	5.8	20	89	0
Cyclohexane	0.831	0.803	-	3.4	20	85	0
Chloroform	0.764	0.735	-	3.8	20	92	0
Ethyl acetate	0.221	0.187	-	15.4	20	85	0
Carbon tetrachloride	0.62	0.604	-	2.6	20	93	0
Tetrahydrofuran	0.062	0.05*	-	19.4	20	78	0
Dibromofluoromethane	0.22	0.22	-	0	20	95	0
1,1,1-Trichloroethane	0.713	0.706	-	1	20	93	0
2-Butanone	10	9.161	-	8.4	20	92	0
1,1-Dichloropropene	0.669	0.649	-	3	20	91	0
Benzene	1.974	1.863	-	5.6	20	92	0
tert-Amyl methyl ether	0.964	0.896	-	7.1	20	89	0
1,2-Dichloroethane-d4	0.244	0.237	-	2.9	20	93	0
1,2-Dichloroethane	0.483	0.457	-	5.4	20	91	0
Methyl cyclohexane	0.858	0.863	-	-0.6	20	88	0
Trichloroethene	0.492	0.478	-	2.8	20	94	0
Dibromomethane	0.201	0.184	-	8.5	20	90	0
1,2-Dichloropropane	0.46	0.435	-	5.4	20	89	0

* Value outside of QC limits.



**Continuing Calibration
Form 7**

Client :	FSL Associates	Lab Number :	L1801518
Project Name :	CUMMINGS ELLIOT LANDING PARCEL	Project Number :	
Instrument ID :	QUIMBY	Calibration Date :	01/18/18 05:50
Lab File ID :	VQ180118A03	Init. Calib. Date(s) :	01/16/18 01/16/18
Sample No :	WG1081984-2	Init. Calib. Times :	10:14 15:43
Channel :			

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
2-Chloroethyl vinyl ether	0.157	0.14	-	10.8	20	83	0
Bromodichloromethane	0.546	0.52	-	4.8	20	91	0
1,4-Dioxane	0.00184	0.00126*	-	31.5*	20	63	0
cis-1,3-Dichloropropene	0.732	0.667	-	8.9	20	90	0
Chlorobenzene-d5	1	1	-	0	20	94	0
Toluene-d8	1.338	1.322	-	1.2	20	92	0
Toluene	1.692	1.654	-	2.2	20	92	0
4-Methyl-2-pentanone	0.101	0.087*	-	13.9	20	83	0
Tetrachloroethene	0.688	0.696	-	-1.2	20	94	0
trans-1,3-Dichloropropene	0.821	0.722	-	12.1	20	90	0
Ethyl methacrylate	0.455	0.4	-	12.1	20	85	0
1,1,2-Trichloroethane	0.325	0.307	-	5.5	20	90	0
Chlorodibromomethane	0.45	0.42	-	6.7	20	91	0
1,3-Dichloropropane	0.724	0.682	-	5.8	20	90	0
1,2-Dibromoethane	0.367	0.341	-	7.1	20	90	0
2-Hexanone	10	8.059	-	19.4	20	88	0
Chlorobenzene	1.752	1.713	-	2.2	20	93	0
Ethylbenzene	3.199	3.203	-	-0.1	20	92	0
1,1,1,2-Tetrachloroethane	0.561	0.549	-	2.1	20	93	0
p/m Xylene	1.2	1.18	-	1.7	20	91	0
o Xylene	1.099	1.084	-	1.4	20	90	0
Styrene	1.73	1.705	-	1.4	20	88	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	92	0
Bromoform	0.508	0.487	-	4.1	20	90	0
Isopropylbenzene	6.519	6.785	-	-4.1	20	90	0
4-Bromofluorobenzene	1.019	1.036	-	-1.7	20	93	0
Bromobenzene	1.464	1.476	-	-0.8	20	92	0
n-Propylbenzene	7.346	7.429	-	-1.1	20	88	0
1,4-Dichlorobutane	1.248	1.21	-	3	20	89	0
1,1,2,2-Tetrachloroethane	0.804	0.762	-	5.2	20	88	0
4-Ethyltoluene	5.789	5.692	-	1.7	20	88	0
2-Chlorotoluene	4.829	4.781	-	1	20	87	0
1,3,5-Trimethylbenzene	4.655	4.711	-	-1.2	20	90	0
1,2,3-Trichloropropane	0.698	0.68	-	2.6	20	90	0
trans-1,4-Dichloro-2-butene	0.237	0.205	-	13.5	20	82	0
4-Chlorotoluene	4.384	4.319	-	1.5	20	88	0
tert-Butylbenzene	4.557	4.488	-	1.5	20	88	0
1,2,4-Trimethylbenzene	4.278	4.238	-	0.9	20	89	0
sec-Butylbenzene	6.139	6.105	-	0.6	20	86	0
p-Isopropyltoluene	5.344	5.23	-	2.1	20	87	0
1,3-Dichlorobenzene	2.803	2.765	-	1.4	20	91	0
1,4-Dichlorobenzene	2.707	2.635	-	2.7	20	91	0
p-Diethylbenzene	2.97	2.86	-	3.7	20	87	0
n-Butylbenzene	4.336	4.158	-	4.1	20	86	0
1,2-Dichlorobenzene	2.411	2.365	-	1.9	20	91	0

* Value outside of QC limits.



Continuing Calibration

Form 7

Client : FSL Associates
 Project Name : CUMMINGS ELLIOT LANDING PARCEL
 Instrument ID : QUIMBY
 Lab File ID : VQ180118A03
 Sample No : WG1081984-2
 Channel :

Lab Number	: L1801518		
Project Number	:		
Calibration Date	: 01/18/18 05:50		
Init. Calib. Date(s)	: 01/16/18	01/16/18	
Init. Calib. Times	: 10:14	15:43	

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2,4,5-Tetramethylbenzene	2.969	3.276	-	-10.3	20	101	0
1,2-Dibromo-3-chloropropan	0.135	0.115	-	14.8	20	80	0
1,3,5-Trichlorobenzene	1.558	1.516	-	2.7	20	91	0
Hexachlorobutadiene	0.847	0.835	-	1.4	20	93	0
1,2,4-Trichlorobenzene	1.262	1.224	-	3	20	93	0
Naphthalene	1.913	1.805	-	5.6	20	93	0
1,2,3-Trichlorobenzene	1.074	1.036	-	3.5	20	92	0

* Value outside of QC limits.



**Continuing Calibration
Form 7**

Client :	FSL Associates	Lab Number :	L1801518
Project Name :	CUMMINGS ELLIOT LANDING PARCEL	Project Number :	
Instrument ID :	JACK	Calibration Date :	01/18/18 18:30
Lab File ID :	VJ180118N03	Init. Calib. Date(s) :	11/16/17 11/16/17
Sample No :	WG1082077-2	Init. Calib. Times :	11:07 15:06
Channel :			

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	111	0
Dichlorodifluoromethane	0.362	0.383	-	-5.8	20	115	0
Chloromethane	0.453	0.452	-	0.2	20	113	0
Vinyl chloride	0.431	0.482	-	-11.8	20	120	0
Bromomethane	10	9.521	-	4.8	20	100	0
Chloroethane	10	6.902	-	31*	20	75	0
Trichlorofluoromethane	0.591	0.507	-	14.2	20	94	0
Ethyl ether	0.166	0.163	-	1.8	20	119	0
1,1-Dichloroethene	0.328	0.339	-	-3.4	20	113	0
Carbon disulfide	10	9.421	-	5.8	20	100	0
Freon-113	0.366	0.361	-	1.4	20	115	0
Iodomethane	0.458	0.209	-	54.4*	20	55	0
Acrolein	10	8.034	-	19.7	20	80	0
Methylene chloride	0.379	0.359	-	5.3	20	116	0
Acetone	10	7.772	-	22.3*	20	120	0
trans-1,2-Dichloroethene	0.356	0.362	-	-1.7	20	112	0
Methyl acetate	10	9.196	-	8	20	111	0
Methyl tert-butyl ether	0.859	0.717	-	16.5	20	103	0
tert-Butyl alcohol	50	41.133	-	17.7	20	115	0
Diisopropyl ether	1.14	1.107	-	2.9	20	114	0
1,1-Dichloroethane	0.631	0.674	-	-6.8	20	119	0
Halothane	0.288	0.293	-	-1.7	20	108	0
Acrylonitrile	10	8.596	-	14	20	111	0
Ethyl tert-butyl ether	0.969	1.064	-	-9.8	20	131	0
Vinyl acetate	0.687	0.642	-	6.6	20	115	0
cis-1,2-Dichloroethene	0.356	0.407	-	-14.3	20	125	0
2,2-Dichloropropane	0.581	0.597	-	-2.8	20	113	0
Bromochloromethane	0.157	0.175	-	-11.5	20	127	0
Cyclohexane	0.704	0.748	-	-6.3	20	126	0
Chloroform	0.604	0.677	-	-12.1	20	125	0
Ethyl acetate	10	9.339	-	6.6	20	121	0
Carbon tetrachloride	10	9.136	-	8.6	20	112	0
Tetrahydrofuran	10	7.892	-	21.1*	20	104	0
Dibromofluoromethane	0.227	0.221	-	2.6	20	109	0
1,1,1-Trichloroethane	0.56	0.574	-	-2.5	20	113	0
2-Butanone	10	9.212	-	7.9	20	119	0
1,1-Dichloropropene	0.538	0.578	-	-7.4	20	120	0
Benzene	1.571	1.74	-	-10.8	20	127	0
tert-Amyl methyl ether	0.871	0.92	-	-5.6	20	130	0
1,2-Dichloroethane-d4	0.264	0.239	-	9.5	20	114	0
1,2-Dichloroethane	0.426	0.443	-	-4	20	119	0
Methyl cyclohexane	0.677	0.722	-	-6.6	20	125	0
Trichloroethene	10	10.409	-	-4.1	20	122	0
Dibromomethane	0.177	0.181	-	-2.3	20	122	0
1,2-Dichloropropane	0.372	0.4	-	-7.5	20	124	0

* Value outside of QC limits.



**Continuing Calibration
Form 7**

Client :	FSL Associates	Lab Number :	L1801518
Project Name :	CUMMINGS ELLIOT LANDING PARCEL	Project Number :	
Instrument ID :	JACK	Calibration Date :	01/18/18 18:30
Lab File ID :	VJ180118N03	Init. Calib. Date(s) :	11/16/17 11/16/17
Sample No :	WG1082077-2	Init. Calib. Times :	11:07 15:06
Channel :			

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
2-Chloroethyl vinyl ether	0.162	0.143	-	11.7	20	113	0
Bromodichloromethane	0.476	0.463	-	2.7	20	114	0
1,4-Dioxane	0.00204	0.0019*	-	6.9	20	118	0
cis-1,3-Dichloropropene	0.619	0.641	-	-3.6	20	122	0
Chlorobenzene-d5	1	1	-	0	20	112	0
Toluene-d8	1.177	1.231	-	-4.6	20	113	0
Toluene	1.189	1.317	-	-10.8	20	125	0
4-Methyl-2-pentanone	10	9.102	-	9	20	99	0
Tetrachloroethene	0.529	0.574	-	-8.5	20	118	0
trans-1,3-Dichloropropene	0.611	0.608	-	0.5	20	116	0
Ethyl methacrylate	0.426	0.4	-	6.1	20	114	0
1,1,2-Trichloroethane	0.268	0.308	-	-14.9	20	134	0
Chlorodibromomethane	0.381	0.36	-	5.5	20	112	0
1,3-Dichloropropane	0.574	0.629	-	-9.6	20	130	0
1,2-Dibromoethane	0.323	0.344	-	-6.5	20	127	0
2-Hexanone	10	8.231	-	17.7	20	112	0
Chlorobenzene	1.306	1.401	-	-7.3	20	120	0
Ethylbenzene	2.453	2.543	-	-3.7	20	118	0
1,1,1,2-Tetrachloroethane	0.446	0.442	-	0.9	20	114	0
p/m Xylene	1.12	1.186	-	-5.9	20	116	0
o Xylene	0.957	0.979	-	-2.3	20	119	-0.01
Styrene	1.557	1.643	-	-5.5	20	122	-0.01
1,4-Dichlorobenzene-d4	1	1	-	0	20	107	0
Bromoform	10	8.367	-	16.3	20	108	0
Isopropylbenzene	4.062	4.421	-	-8.8	20	121	0
4-Bromofluorobenzene	0.867	0.91	-	-5	20	115	0
Bromobenzene	0.984	1.011	-	-2.7	20	115	0
n-Propylbenzene	4.596	4.843	-	-5.4	20	116	0
1,4-Dichlorobutane	1.055	0.953	-	9.7	20	106	0
1,1,2,2-Tetrachloroethane	0.657	0.719	-	-9.4	20	130	0
4-Ethyltoluene	3.67	3.926	-	-7	20	117	0
2-Chlorotoluene	3.08	3.31	-	-7.5	20	118	0
1,3,5-Trimethylbenzene	3.247	3.446	-	-6.1	20	117	0
1,2,3-Trichloropropane	0.547	0.579	-	-5.9	20	127	0
trans-1,4-Dichloro-2-butene	10	12.191	-	-21.9*	20	182	0
4-Chlorotoluene	2.942	3.178	-	-8	20	121	0
tert-Butylbenzene	2.577	2.77	-	-7.5	20	121	0
1,2,4-Trimethylbenzene	3.249	3.465	-	-6.6	20	115	0
sec-Butylbenzene	3.472	3.679	-	-6	20	120	0
p-Isopropyltoluene	3.084	3.285	-	-6.5	20	118	0
1,3-Dichlorobenzene	1.807	1.904	-	-5.4	20	114	0
1,4-Dichlorobenzene	1.805	1.939	-	-7.4	20	116	0
p-Diethylbenzene	1.645	1.888	-	-14.8	20	126	0
n-Butylbenzene	2.472	2.634	-	-6.6	20	119	0
1,2-Dichlorobenzene	1.674	1.792	-	-7	20	113	0

* Value outside of QC limits.



Continuing Calibration Form 7

Client : FSL Associates
 Project Name : CUMMINGS ELLIOT LANDING PARCEL
 Instrument ID : JACK
 Lab File ID : VJ180118N03
 Sample No : WG1082077-2
 Channel :

Lab Number	: L1801518		
Project Number	:		
Calibration Date	: 01/18/18 18:30		
Init. Calib. Date(s)	11/16/17	11/16/17	
Init. Calib. Times	11:07	15:06	

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2,4,5-Tetramethylbenzene	2.343	2.71	-	-15.7	20	120	0
1,2-Dibromo-3-chloropropan	10	9.229	-	7.7	20	107	0
1,3,5-Trichlorobenzene	0.921	1.038	-	-12.7	20	112	0
Hexachlorobutadiene	10	10.442	-	-4.4	20	106	0
1,2,4-Trichlorobenzene	0.78	0.792	-	-1.5	20	106	0
Naphthalene	1.761	1.715	-	2.6	20	108	0
1,2,3-Trichlorobenzene	0.652	0.659	-	-1.1	20	105	0

* Value outside of QC limits.



APPENDIX C

AIR SAMPLING CANISTER FIELD RECORDS

Client: FSLDate: 1/13/18 - 1/14/18Site: Cummings

Weather:

Scope of Work: complete 15 IA samples in Cummings center

Sample ID	S-149J.1	S-149J.2	S-149J.3	S-157J.3	S-157J.1
Can ID	2487	919	2098	2124	1640
Regulator ID	0315	0699	0089	0331	0496
Can size	6L	6L	6L	6L	6L
Indoor (In), Background(Bk), Sub-slab (SS)	IN	IN	IN	IN	IN
Flow controller readout (ml/min)					
Can pressure start ("Hg) - LAB	-30.0	-30.0	-30.0	-30.0	-30.0
Can pressure start ("Hg) - FIELD	-30.12	-26.82	-29.76	-29.61	-29.18
Can pressure end ("Hg)	-0.85	-0.47	0.00	-7.12	-6.72 - 12.45
Start time	0840	0845	0850	0922	0938
End time	0838	0846	0846	0855	0900
Barometric pressure start ("Hg)					
Barometric pressure end ("Hg)					
Temperature start (°F)	22°C	22°C	22°C	22°C	22°C
Temperature end (°F)	22°C	22°C	22°C	22°C	22°C

Sub-slab Sampling

Slab thickness ("")				
Water present				
Helium in shroud (%) (10% - 20%)				
Helium in sub-slab sample tube (ppm)				
1/4" OD sample tube length (")				
Sample tube purge, Gillian pump (min) (1/4" tubing volume = 5.43 ml/ft)				
Shut in Test: -15" Hg for 1 minute				

Sampling Notes:

Technician:

KJ

Client: FSL
 Date: 7/13/18 - 7/14/18

Site: Cummings, Beverly
 Weather: Sun, 70°

Scope of Work:

Sample ID	S-157J.2	S-135C.3	Duplicate-14-1	S-135C.2	S-135C.1
Can ID	1818	1650	940	1588	784
Regulator ID	0762	0133	0122	0560	0397
Can size	6L	6L	6L	6L	6L
Indoor (In), Background(Bk), Sub-slab (SS)	FAIN	FAIN	AIN	IN	IN
Flow controller readout (ml/min)					
Can pressure start ("Hg) - LAB	-29.7	-30.0	-30.0	-30.0	-30.0
Can pressure start ("Hg) - FIELD	-30.35	-29.47	-29.50	-29.32	-29.58
Can pressure end ("Hg)	-6.72	-8.91	-7.41	-0.41	-6.97
Start time	0933	0950	0950	0954	0957
End time	0857	0915	0915	0916	0917
Barometric pressure start ("Hg)					
Barometric pressure end ("Hg)					
Temperature start (°F)	22°C	22°C	22°C	22°C	22°C
Temperature end (°F)	22°C	22°C	22°C	22°C	22°C
Sub-slab Sampling					
Slab thickness ("")					
Water present					
Helium in shroud (%) (10% - 20%)					
Helium in sub-slab sample tube (ppm)					
1/4" OD sample tube length ("")					
Sample tube purge, Gillian pump (min) (1/4" tubing volume = 5.43 ml/ft)					
Shut in Test: -15" Hg for 1 minute					

Sampling Notes:

Technician: KJ

Client: FSL
 Date: 1/14/18

Site: Cummings Center
 Weather:

Scope of Work: _____

Sample ID	S-171X.2	S-171X.1	S-171X.3	I4-2 Duplicate	S-1100.3
Can ID	2113	1666	1711	2608	2482
Regulator ID	0200	0729	0834	0172	0168
Can size	6L	6L	6L	6L	6L
Indoor (In), Background(Bk), Sub-slab (SS)	In	In	In	In	In
Flow controller readout (ml/min)	1.0	3.2	3.0	3.0	3.0
Can pressure start ("Hg) - LAB					
Can pressure start ("Hg) - FIELD	-29.81	-30.71	-29.27	-30.10	-29.28
Can pressure end ("Hg)	-7.07	-16.28	-8.80	-7.15	-7.25
Start time	1022	1028	1035	1035	1059
End time	1008	1009	1010	1010	1020
Barometric pressure start ("Hg)					
Barometric pressure end ("Hg)					
Temperature start (°F)					
Temperature end (°F)					
Sub-slab Sampling					
Slab thickness (")					
Water present					
Helium in shroud (%) (10% - 20%)					
Helium in sub-slab sample tube (ppm)					
1/4" OD sample tube length (")					
Sample tube purge, Gillian pump (min) (1/4" tubing volume = 5.43 ml/ft)					
Shut in Test: -15" Hg for 1 minute					

Sampling Notes: _____

Technician: KJ

Client: FSL
 Date: 1/13/18 - 1/14/18

Site: Cummings Beverly
 Weather: Sun, 20's

Scope of Work: Complete IA Sampling, collect 24 ss air samples

Sample ID	S-1100.2	S-1100.1	SV-1	SV-11	SV-8
Can ID	1514	611	450	2311	1747
Regulator ID	0989	0268	0049	0093	1007
Can size	6L	6L	2.7	2.7	2.7
Indoor (In), Background(Bk), Sub-slab (SS)	IN	IN	IN SS	IN SS	IN SS
Flow controller readout (ml/min)	3.0	3.0	71	71	72
Can pressure start ("Hg) - LAB	-30.0	-30.0	-30.0	-30.0	
Can pressure start ("Hg) - FIELD	-29.44	-29.49	-24.50	-26.41	-31.27
Can pressure end ("Hg)	-10.43	-1.63	-6.70	-6.73	-5.95
Start time	1115	1118	1138	1326	1500
End time	1023	1022	1158	1350	1529
Barometric pressure start ("Hg)					
Barometric pressure end ("Hg)					
Temperature start (°F)	22°C	22°C	22°C	22°C	22°C
Temperature end (°F)	22°C	22°C	22°C	22°C	22°C
Sub-slab Sampling					
Slab thickness ("")			—	—	—
Water present			N	—	—
Helium in shroud (%) (10% - 20%)			10.4	N/A	12.2
Helium in sub-slab sample tube (ppm)			0.0	N/A	0.0
1/4" OD sample tube length (')			3 ft	3 ft	3 ft
Sample tube purge, Gillian pump (min) (1/4" tubing volume = 5.43 ml/ft)			1 min	2	1
Shut in Test: -15" Hg for 1 minute			Y	Y	Y

Sampling Notes: Locations without helium check data were ~~for leak~~ tested using soapy water (Alconox). Vapor point locations were too tight to the walls to use helium shroud.

Technician: KJ

Client: FSL
 Date: 1/14/18

Site: Cummings Beverly
 Weather: Sun, 20's

Scope of Work:

Sample ID	SV-9	SV-5	Duplicate		
Can ID	486	466	1727		
Regulator ID	1008	0269	1015		
Can size	2.7	2.7	(KJ) 2.7		
Indoor (In), Background(Bk), Sub-slab (SS)	IN SS	IN SS	72 (KJ) IN SS		
Flow controller readout (ml/min)	72	72	72		
Can pressure start ("Hg) - LAB	-30.0	-30.0	-30.0		
Can pressure start ("Hg) - FIELD	-30.53	-29.02	-30.35		
Can pressure end ("Hg)	-7.57	-6.66	-5.73		
Start time	1547	1652	1652		
End time	1615	1721	1721		
Barometric pressure start ("Hg)					
Barometric pressure end ("Hg)					
Temperature start (°F)	22°	22°	22°		
Temperature end (°F)	22°	22°	22°		
Sub-slab Sampling					
Slab thickness ("")	—	—	—		
Water present	—	—	—		
Helium in shroud (%) (10% - 20%)	N/A	N/A	N/A		
Helium in sub-slab sample tube (ppm)	N/A	N/A	N/A		
1/4" OD sample tube length (")	3 ft.	9 1/4 ft	4 ft		
Sample tube purge, Gillian pump (min) (1/4" tubing volume = 5.43 ml/ft)	2	4	4		
Shut in Test: -15" Hg for 1 minute	✓	✓	✓		

Sampling Notes:

Technician: KJ

Client: FSL
 Date: 1/15/18

Site: Elliott Landing
 Weather: snow, 12°F

Scope of Work: _____

Sample ID	SG-2	SG-5	SG-4	Duplicate
Can ID	373	395	462	2208
Regulator ID	0263	0257	0830	0464
Can size	2.7	2.7	2.7	2.7
Indoor (in), Background(Bk), Sub-slab (SS)	18EA SS	SS	SS	SS
Flow controller readout (ml/min)	72.0	72.0	72	72
Can pressure start ("Hg) - LAB	-30.0	-30	-30.0	-30.0
Can pressure start ("Hg) - FIELD	-30.13	-30.04	-30.94	-29.67
Can pressure end ("Hg)	-7.61	-7.68	-5.43	-9.82
Start time	1640	1718	1815	1815
End time	1705	1745	1842	1842
Barometric pressure start ("Hg)				
Barometric pressure end ("Hg)				
Temperature start (°F)	22°C	22°C	22°C	22°C
Temperature end (°F)	22°C	22°C	22°C	22°C

Sub-slab Sampling

Slab thickness ("")	—	—	—	—
Water present	—	—	—	—
Helium in shroud (%) (10% - 20%)	13.8	N/A	N/A	N/A
Helium in sub-slab sample tube (ppm)	0.0	N/A	N/A	N/A
1/4" OD sample tube length ("')	3 ft	3 ft	3 ft	3 ft
Sample tube purge, Gillian pump (min) (1/4" tubing volume = 5.43 ml/ft)	2 min	2	2	2
Shut in Test: -15" Hg for 1 minute	Y	Y	Y	Y

Sampling Notes: _____

Technician: KJ

Client: FSL
 Date: 1/15/18

Site: Cunnings Beverly
 Weather: Snow, 12°F

Scope of Work:

Sample ID	Duplicated	SG-3		
Can ID	470	473		
Regulator ID	0360	0381		
Can size	2.7	2.7		
Indoor (in), Background(Bk), Sub-slab (SS)	55	55		
Flow controller readout (ml/min)	72	72		
Can pressure start ("Hg) - LAB				
Can pressure start ("Hg) - FIELD	-30.35	-29.09		
Can pressure end ("Hg)	-8.37	-7.54		
Start time	2028	2028		
End time	2050	2050		
Barometric pressure start ("Hg)				
Barometric pressure end ("Hg)				
Temperature start (°F)	22°C	22°C		
Temperature end (°F)	22°C	22°C		

Sub-slab Sampling

Slab thickness ("")	—	—	
Water present	—	—	
Helium in shroud (%) (10% - 20%)	N/A	N/A	
Helium in sub-slab sample tube (ppm)	—	—	
1/4" OD sample tube length ("")	3 ft	3 ft	
Sample tube purge, Gillian pump (min) (1/4" tubing volume = 5.43 ml/ft)	2	2	
Shut in Test: -15" Hg for 1 minute	4	4	

Sampling Notes:

Technician: KJ

Client: FSL Associates
Date: 1/14/18Site: Beverly
Weather:Scope of Work: _____

Sample ID	SV-2	SV-13	SV-12	SV-10	SV-7
Can ID	180	362	2437	2177	2027
Regulator ID	1016	1011	0955	1009	0113
Can size	2.7 m				
Indoor (In), Background(Bk), Sub-slab (SS)	SS	SS	SS	SS	SS
Flow controller readout (ml/min)	72.0 ml/min				
Can pressure start ("Hg) - LAB					
Can pressure start ("Hg) - FIELD	-29.96	-30.19	-30.18	-29.89	-30.43
Can pressure end ("Hg)	-6.36	-5.46	-5.54	-7.42	-6.00
Start time	1232	1340	1412	1509	1623
End time	1302	1400	1442	1538	1650
Barometric pressure start ("Hg)					
Barometric pressure end ("Hg)					
Temperature start (°F)					
Temperature end (°F)					

Sub-slab Sampling

Slab thickness ("")	—	—	—	—
Water present	No	No	No	No
Helium in shroud (%) (10% - 20%)	13.0%	n/a	n/a	n/a
Helium in sub-slab sample tube (ppm)	65 ppm	n/a	n/a	n/a
1/4" OD sample tube length (")	3 ft	3 ft	3 ft	3 ft
Sample tube purge, Gillian pump (min) (1/4" tubing volume = 5.43 ml/ft)	2 min	1 min	1 min	1 min
Shut in Test: -15" Hg for 1 minute	Yes	Yes	Yes	Yes

Sampling Notes: _____

_____Technician: CR

Client: FSL Associates
 Date: 1/14/18

Site: Beverly
 Weather: _____

Scope of Work: _____

1/15/18 →

Elliott Landing ~~Scituate~~

Sample ID	SV-6	SV-4	SV-3	SG-1	SG-3
Can ID	486	1805	416	391	333
Regulator ID.	0625	0360	0763	0336	0045
Can size	2.7m	2.7m	2.7m	2.7m	2.7m
Indoor (In), Background(Bk), Sub-slab (SS)	55	55	55	55	55
Flow controller readout (ml/min)	72.0 ml/min				
Can pressure start ("Hg) - LAB					
Can pressure start ("Hg) - FIELD	-30.45	-30.39	-31.59	-31.13	-26.71
Can pressure end ("Hg)	-8.05	-5.08	-7.59	-8.54	-8.43
Start time	1646	1701	1546	1635	1730
End time	1716	1728	1612	1655	1758
Barometric pressure start ("Hg)					
Barometric pressure end ("Hg)					
Temperature start (°F)					
Temperature end (°F)					

Sub-slab Sampling

Slab thickness ("")	—	—	—	—	—
Water present	No	No	No	No	No
Helium in shroud (%) (10% - 20%)	n/a	n/a	14.4%	n/a	13.7%
Helium in sub-slab sample tube (ppm)	n/a	n/a	0.0	n/a	0.0
1/4" OD sample tube length (")	3 ft				
Sample tube purge, Gillian pump (min) (1/4" tubing volume = 5.43 ml/ft)	1 min.				
Shut in Test: -15" Hg for 1 minute	Yes	Yes	Yes	Yes	Yes

Sampling Notes: _____

Technician: CR

Client: PSL - Associates
 Date: 1/15/18

Site: Beverly
 Weather:

Scope of Work: _____

Sample ID	Elliott Landing Suite 1579	
Can ID	56-6	56-4
Regulator ID	1012	1014
Can size	2.7m	2x7m
Indoor (In), Background(Bk), Sub-slab (SS)	SS	SS
Flow controller readout (ml/min)	27.0 ml/min	27.0 ml/min
Can pressure start ("Hg) - LAB		
Can pressure start ("Hg) - FIELD	-30.30	-31.06
Can pressure end ("Hg)	-8.52	-8.50
Start time	1815	2020
End time	1837	2045
Barometric pressure start ("Hg)		
Barometric pressure end ("Hg)		
Temperature start (°F)		
Temperature end (°F)		

Sub-slab Sampling

Slab thickness ("")	—	—	—
Water present	No	No	
Helium in shroud (%) (10% - 20%)	n/a	n/a	
Helium in sub-slab sample tube (ppm)	n/a	n/a	
1/4" OD sample tube length (")	3 ft	3 ft	
Sample tube purge, Gillian pump (min) (1/4" tubing volume = 5.43 ml/ft)	1 min	1 min	
Shut in Test: -15" Hg for 1 minute	Yes	Yes	

Sampling Notes: _____

Technician: CR

APPENDIX D

SOIL GAS AND INDOOR AIR ANALYTICAL ANALYSIS RESULTS



ANALYTICAL REPORT

Lab Number:	L1801542
Client:	FSL Associates 358 Chestnut Hill Ave. Brighton, MA 02135
ATTN:	Bruce Hoskins
Phone:	(617) 232-0001
Project Name:	CUMMINGS ELLIOTT LANDING
Project Number:	CUMMINGS BEVERLY
Report Date:	02/02/18

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Certifications & Approvals: MA (M-MA030), NH NELAP (2062), NJ NELAP (MA015), CT (PH-0141), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LA000299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-13-00067), USFWS (Permit #LE2069641).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1801542-01	SG-2	SOIL_VAPOR	BEVERLY, MA	01/15/18 17:05	01/16/18
L1801542-02	SG-5	SOIL_VAPOR	BEVERLY, MA	01/15/18 17:45	01/16/18
L1801542-03	SG-4	SOIL_VAPOR	BEVERLY, MA	01/15/18 18:42	01/16/18
L1801542-04	DUPLICATE	SOIL_VAPOR	BEVERLY, MA	01/15/18 18:42	01/16/18
L1801542-05	SG-1	SOIL_VAPOR	BEVERLY, MA	01/15/18 16:55	01/16/18
L1801542-06	SG-3	SOIL_VAPOR	BEVERLY, MA	01/15/18 17:58	01/16/18
L1801542-07	SG-6	SOIL_VAPOR	BEVERLY, MA	01/15/18 18:37	01/16/18
L1801542-08	UNUSED CAN #416	SOIL_VAPOR	BEVERLY, MA		01/16/18

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	YES
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Case Narrative (continued)

Report Submission

This report replaces the one previously issued on January 23, 2018. The report has been revised to report additional compounds at the request of the client. Unfortunately 4-Ethyltoluene could not be reported.

MCP Related Narratives

Canisters were released from the laboratory on January 11, 2018. The canister certification data is provided as an addendum.

MCP Volatile Organics in Air

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

L1801542-02 and -05 results for Acetone should be considered estimated due to co-elution with a non-target peak.

The WG1082320-3 LCS recoveries were below the acceptance criteria for propylene (66%) and dichlorodifluoromethane (66%); however, all results are considered to have a potentially low bias for these compounds.

The WG1082320-5 Laboratory Duplicate RPD for dichlorodifluoromethane (54%), performed on L1801542-04, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

Petroleum Hydrocarbons in Air

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

All significant concentrations of non-petroleum VOCs detected in the TO-15 analysis were subtracted from the

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Case Narrative (continued)

corresponding hydrocarbon ranges.

Sample Receipt

The sample designated SG-1 (L1801542-05)

The sample designated SG-1 (L1801542-05) had a RPD for the pre- and post-flow controller calibration check (21% RPD) that was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 72.0 mL/minute; the final flow rate was 89 mL/minute. The final pressure recorded by the laboratory of the associated canister was -7.3 inches of mercury. No further action was required.

The sample designated SG-6 (L1801542-07) had a RPD for the pre- and post-flow controller calibration check (22% RPD) that was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 72.0 mL/minute; the final flow rate was 90 mL/minute. The final pressure recorded by the laboratory of the associated canister was -8.1 inches of mercury. No further action was required.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Christopher J. Anderson Christopher J. Anderson

Title: Technical Director/Representative

Date: 02/02/18

AIR



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-01
 Client ID: SG-2
 Sample Location: BEVERLY, MA
 Sample Depth:
 Matrix: Soil_Vapor
 Anaytical Method: 101,TO15-SIM
 Analytical Date: 01/19/18 17:26
 Analyst: MB

Date Collected: 01/15/18 17:05
 Date Received: 01/16/18
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.038	0.500	0.034	0.065	0.861	0.059	J	1
Dichlorodifluoromethane	0.228	0.200	0.100	1.13	0.989	0.494		1
Chloromethane	0.118	0.200	0.100	0.244	0.413	0.207	J	1
Freon-114	0.075	0.050	0.025	0.524	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.015	0.020	0.010	0.040	0.053	0.026	J	1
Ethanol	5.81	5.00	0.157	10.9	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	2.09	1.00	0.500	4.96	2.38	1.19		1
Trichlorofluoromethane	0.443	0.050	0.025	2.49	0.281	0.140		1
Isopropanol	0.768	0.500	0.153	1.89	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.495	0.200	0.063	1.54	0.623	0.196		1
Freon-113	0.095	0.050	0.025	0.728	0.383	0.192		1
trans-1,2-Dichloroethene	0.014	0.020	0.010	0.056	0.079	0.040	J	1
1,1-Dichloroethane	0.103	0.020	0.010	0.417	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.284	0.500	0.250	0.838	1.47	0.737	J	1
cis-1,2-Dichloroethene	0.014	0.020	0.010	0.056	0.079	0.040	J	1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-01 Date Collected: 01/15/18 17:05
 Client ID: SG-2 Date Received: 01/16/18
 Sample Location: BEVERLY, MA Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.488	0.500	0.020	1.76	1.80	0.072	J	1
Chloroform	0.254	0.020	0.010	1.24	0.098	0.049		1
Tetrahydrofuran	0.063	0.200	0.037	0.186	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	0.302	0.020	0.010	1.65	0.109	0.055		1
Benzene	0.064	0.100	0.050	0.204	0.319	0.160	J	1
Carbon tetrachloride	0.018	0.020	0.010	0.113	0.126	0.063	J	1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.261	0.020	0.010	1.40	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.106	0.050	0.025	0.399	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.141	0.020	0.010	0.956	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.023	0.020	0.010	0.10	0.087	0.043		1
p/m-Xylene	0.071	0.040	0.020	0.308	0.174	0.087		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID:	L1801542-01	Date Collected:	01/15/18 17:05
Client ID:	SG-2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.187	0.020	0.010	0.796	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.027	0.020	0.010	0.117	0.087	0.043	1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
1,2,4-Trimethylbenzene	0.040	0.020	0.010	0.197	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	0.023	0.020	0.010	0.138	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.076	0.050	0.025	0.398	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	88		60-140
bromochloromethane	91		60-140
chlorobenzene-d5	87		60-140

Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-02
 Client ID: SG-5
 Sample Location: BEVERLY, MA
 Sample Depth:
 Matrix: Soil_Vapor
 Anaytical Method: 101,TO15-SIM
 Analytical Date: 01/19/18 17:59
 Analyst: MB

Date Collected: 01/15/18 17:45
 Date Received: 01/16/18
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.305	0.500	0.034	0.525	0.861	0.059	J	1
Dichlorodifluoromethane	0.356	0.200	0.100	1.76	0.989	0.494		1
Chloromethane	ND	0.200	0.100	ND	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.082	0.020	0.010	0.216	0.053	0.026		1
Ethanol	0.533	5.00	0.157	1.00	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	1.01	1.00	0.500	2.40	2.38	1.19		1
Trichlorofluoromethane	0.325	0.050	0.025	1.83	0.281	0.140		1
Isopropanol	ND	0.500	0.153	ND	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.187	0.200	0.063	0.582	0.623	0.196	J	1
Freon-113	0.111	0.050	0.025	0.851	0.383	0.192		1
trans-1,2-Dichloroethene	0.131	0.020	0.010	0.519	0.079	0.040		1
1,1-Dichloroethane	0.192	0.020	0.010	0.777	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737		1
cis-1,2-Dichloroethene	0.140	0.020	0.010	0.555	0.079	0.040		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-02 Date Collected: 01/15/18 17:45
 Client ID: SG-5 Date Received: 01/16/18
 Sample Location: BEVERLY, MA Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072		1
Chloroform	0.567	0.020	0.010	2.77	0.098	0.049		1
Tetrahydrofuran	0.093	0.200	0.037	0.274	0.590	0.109	J	1
1,2-Dichloroethane	0.015	0.020	0.010	0.061	0.081	0.041	J	1
n-Hexane	0.339	0.200	0.033	1.19	0.705	0.116		1
1,1,1-Trichloroethane	0.512	0.020	0.010	2.79	0.109	0.055		1
Benzene	ND	0.100	0.050	ND	0.319	0.160		1
Carbon tetrachloride	0.047	0.020	0.010	0.296	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	2.52	0.020	0.010	13.5	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.036	0.200	0.032	0.148	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.079	0.050	0.025	0.298	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.981	0.020	0.010	6.65	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.019	0.020	0.010	0.083	0.087	0.043	J	1
p/m-Xylene	0.064	0.040	0.020	0.278	0.174	0.087		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID:	L1801542-02	Date Collected:	01/15/18 17:45
Client ID:	SG-5	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.171	0.020	0.010	0.728	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.024	0.020	0.010	0.104	0.087	0.043	1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
1,2,4-Trimethylbenzene	0.042	0.020	0.010	0.206	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	0.015	0.020	0.010	0.090	0.120	0.060	J 1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.097	0.050	0.025	0.509	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	77		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	78		60-140

Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-03
 Client ID: SG-4
 Sample Location: BEVERLY, MA
 Sample Depth:
 Matrix: Soil_Vapor
 Analytical Method: 101,TO15-SIM
 Analytical Date: 01/19/18 18:31
 Analyst: MB

Date Collected: 01/15/18 18:42
 Date Received: 01/16/18
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.273	0.500	0.034	0.470	0.861	0.059	J	1
Dichlorodifluoromethane	0.380	0.200	0.100	1.88	0.989	0.494		1
Chloromethane	0.186	0.200	0.100	0.384	0.413	0.207	J	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.013	0.020	0.010	0.029	0.044	0.022	J	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.015	0.020	0.010	0.040	0.053	0.026	J	1
Ethanol	0.749	5.00	0.157	1.41	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	1.80	1.00	0.500	4.28	2.38	1.19		1
Trichlorofluoromethane	0.319	0.050	0.025	1.79	0.281	0.140		1
Isopropanol	0.180	0.500	0.153	0.442	1.23	0.376	J	1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.108	0.200	0.063	0.336	0.623	0.196	J	1
Freon-113	0.139	0.050	0.025	1.07	0.383	0.192		1
trans-1,2-Dichloroethene	0.016	0.020	0.010	0.063	0.079	0.040	J	1
1,1-Dichloroethane	0.045	0.020	0.010	0.182	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.313	0.500	0.250	0.923	1.47	0.737	J	1
cis-1,2-Dichloroethene	0.080	0.020	0.010	0.317	0.079	0.040		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-03 Date Collected: 01/15/18 18:42
 Client ID: SG-4 Date Received: 01/16/18
 Sample Location: BEVERLY, MA Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.027	0.500	0.020	0.097	1.80	0.072	J	1
Chloroform	0.154	0.020	0.010	0.752	0.098	0.049		1
Tetrahydrofuran	0.744	0.200	0.037	2.19	0.590	0.109		1
1,2-Dichloroethane	0.018	0.020	0.010	0.073	0.081	0.041	J	1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	0.059	0.020	0.010	0.322	0.109	0.055		1
Benzene	0.072	0.100	0.050	0.230	0.319	0.160	J	1
Carbon tetrachloride	0.052	0.020	0.010	0.327	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.803	0.020	0.010	4.32	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.109	0.050	0.025	0.411	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.450	0.020	0.010	3.05	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.023	0.020	0.010	0.10	0.087	0.043		1
p/m-Xylene	0.075	0.040	0.020	0.326	0.174	0.087		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID:	L1801542-03	Date Collected:	01/15/18 18:42
Client ID:	SG-4	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.160	0.020	0.010	0.681	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.032	0.020	0.010	0.139	0.087	0.043	1
1,3,5-Trimethylbenzene	0.016	0.020	0.010	0.079	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.057	0.020	0.010	0.280	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	0.011	0.020	0.010	0.066	0.120	0.060	J 1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.078	0.050	0.025	0.409	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	79		60-140
bromochloromethane	84		60-140
chlorobenzene-d5	79		60-140

Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-04
 Client ID: DUPLICATE
 Sample Location: BEVERLY, MA
 Sample Depth:
 Matrix: Soil_Vapor
 Anaytical Method: 101,TO15-SIM
 Analytical Date: 01/19/18 19:04
 Analyst: MB

Date Collected: 01/15/18 18:42
 Date Received: 01/16/18
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.222	0.500	0.034	0.382	0.861	0.059	J	1
Dichlorodifluoromethane	0.585	0.200	0.100	2.89	0.989	0.494		1
Chloromethane	0.226	0.200	0.100	0.467	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.016	0.020	0.010	0.035	0.044	0.022	J	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.015	0.020	0.010	0.040	0.053	0.026	J	1
Ethanol	0.798	5.00	0.157	1.50	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	1.90	1.00	0.500	4.51	2.38	1.19		1
Trichlorofluoromethane	0.284	0.050	0.025	1.60	0.281	0.140		1
Isopropanol	0.230	0.500	0.153	0.565	1.23	0.376	J	1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.083	0.200	0.063	0.258	0.623	0.196	J	1
Freon-113	0.078	0.050	0.025	0.598	0.383	0.192		1
trans-1,2-Dichloroethene	0.014	0.020	0.010	0.056	0.079	0.040	J	1
1,1-Dichloroethane	0.039	0.020	0.010	0.158	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.340	0.500	0.250	1.00	1.47	0.737	J	1
cis-1,2-Dichloroethene	0.065	0.020	0.010	0.258	0.079	0.040		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-04 Date Collected: 01/15/18 18:42
 Client ID: DUPLICATE Date Received: 01/16/18
 Sample Location: BEVERLY, MA Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072		1
Chloroform	0.126	0.020	0.010	0.615	0.098	0.049		1
Tetrahydrofuran	0.562	0.200	0.037	1.66	0.590	0.109		1
1,2-Dichloroethane	0.017	0.020	0.010	0.069	0.081	0.041	J	1
n-Hexane	0.036	0.200	0.033	0.127	0.705	0.116	J	1
1,1,1-Trichloroethane	0.047	0.020	0.010	0.256	0.109	0.055		1
Benzene	0.097	0.100	0.050	0.310	0.319	0.160	J	1
Carbon tetrachloride	0.060	0.020	0.010	0.377	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.634	0.020	0.010	3.41	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.118	0.050	0.025	0.445	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.341	0.020	0.010	2.31	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.025	0.020	0.010	0.109	0.087	0.043		1
p/m-Xylene	0.075	0.040	0.020	0.326	0.174	0.087		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID:	L1801542-04	Date Collected:	01/15/18 18:42
Client ID:	DUPLICATE	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.171	0.020	0.010	0.728	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.029	0.020	0.010	0.126	0.087	0.043	1
1,3,5-Trimethylbenzene	0.010	0.020	0.010	0.049	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.042	0.020	0.010	0.206	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	3.01	0.050	0.025	15.8	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	79		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	80		60-140

Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-05
 Client ID: SG-1
 Sample Location: BEVERLY, MA
 Sample Depth:
 Matrix: Soil_Vapor
 Anaytical Method: 101,TO15-SIM
 Analytical Date: 01/19/18 20:09
 Analyst: MB

Date Collected: 01/15/18 16:55
 Date Received: 01/16/18
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.853	0.500	0.034	1.47	0.861	0.059		1
Dichlorodifluoromethane	0.345	0.200	0.100	1.71	0.989	0.494		1
Chloromethane	0.545	0.200	0.100	1.13	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.084	0.020	0.010	0.186	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.011	0.020	0.010	0.029	0.053	0.026	J	1
Ethanol	19.1	5.00	0.157	36.0	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	5.12	1.00	0.500	12.2	2.38	1.19		1
Trichlorofluoromethane	0.324	0.050	0.025	1.82	0.281	0.140		1
Isopropanol	1.16	0.500	0.153	2.85	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.080	0.200	0.063	0.249	0.623	0.196	J	1
Freon-113	0.110	0.050	0.025	0.843	0.383	0.192		1
trans-1,2-Dichloroethene	0.014	0.020	0.010	0.056	0.079	0.040	J	1
1,1-Dichloroethane	0.018	0.020	0.010	0.073	0.081	0.041	J	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.561	0.500	0.250	1.65	1.47	0.737		1
cis-1,2-Dichloroethene	0.014	0.020	0.010	0.056	0.079	0.040	J	1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-05 Date Collected: 01/15/18 16:55
 Client ID: SG-1 Date Received: 01/16/18
 Sample Location: BEVERLY, MA Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.204	0.500	0.020	0.735	1.80	0.072	J	1
Chloroform	0.057	0.020	0.010	0.278	0.098	0.049		1
Tetrahydrofuran	0.209	0.200	0.037	0.616	0.590	0.109		1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	0.272	0.200	0.033	0.959	0.705	0.116		1
1,1,1-Trichloroethane	0.096	0.020	0.010	0.524	0.109	0.055		1
Benzene	0.395	0.100	0.050	1.26	0.319	0.160		1
Carbon tetrachloride	0.089	0.020	0.010	0.560	0.126	0.063		1
Cyclohexane	0.085	0.200	0.030	0.293	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.081	0.020	0.010	0.435	0.107	0.054		1
2,2,4-Trimethylpentane	0.119	0.200	0.027	0.556	0.934	0.126	J	1
Heptane	0.083	0.200	0.032	0.340	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.593	0.050	0.025	2.23	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.043	0.020	0.010	0.292	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.105	0.020	0.010	0.456	0.087	0.043		1
p/m-Xylene	0.281	0.040	0.020	1.22	0.174	0.087		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID:	L1801542-05	Date Collected:	01/15/18 16:55
Client ID:	SG-1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.267	0.020	0.010	1.14	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.108	0.020	0.010	0.469	0.087	0.043	1
1,3,5-Trimethylbenzene	0.024	0.020	0.010	0.118	0.098	0.049	1
1,2,4-Trimethylbenzene	0.085	0.020	0.010	0.418	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	0.013	0.020	0.010	0.078	0.120	0.060	J 1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.103	0.050	0.025	0.540	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	78		60-140
bromochloromethane	82		60-140
chlorobenzene-d5	74		60-140

Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-06
 Client ID: SG-3
 Sample Location: BEVERLY, MA
 Sample Depth:
 Matrix: Soil_Vapor
 Analytical Method: 101,TO15-SIM
 Analytical Date: 01/19/18 20:42
 Analyst: MB

Date Collected: 01/15/18 17:58
 Date Received: 01/16/18
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.061	0.500	0.034	0.105	0.861	0.059	J	1
Dichlorodifluoromethane	0.333	0.200	0.100	1.65	0.989	0.494		1
Chloromethane	0.159	0.200	0.100	0.328	0.413	0.207	J	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.019	0.020	0.010	0.050	0.053	0.026	J	1
Ethanol	2.32	5.00	0.157	4.37	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	1.79	1.00	0.500	4.25	2.38	1.19		1
Trichlorofluoromethane	0.312	0.050	0.025	1.75	0.281	0.140		1
Isopropanol	0.677	0.500	0.153	1.66	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.090	0.200	0.063	0.280	0.623	0.196	J	1
Freon-113	0.115	0.050	0.025	0.881	0.383	0.192		1
trans-1,2-Dichloroethene	0.011	0.020	0.010	0.044	0.079	0.040	J	1
1,1-Dichloroethane	0.011	0.020	0.010	0.045	0.081	0.041	J	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.389	0.500	0.250	1.15	1.47	0.737	J	1
cis-1,2-Dichloroethene	0.151	0.020	0.010	0.599	0.079	0.040		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-06 Date Collected: 01/15/18 17:58
 Client ID: SG-3 Date Received: 01/16/18
 Sample Location: BEVERLY, MA Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.024	0.500	0.020	0.087	1.80	0.072	J	1
Chloroform	0.162	0.020	0.010	0.791	0.098	0.049		1
Tetrahydrofuran	0.106	0.200	0.037	0.313	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	0.028	0.020	0.010	0.153	0.109	0.055		1
Benzene	0.071	0.100	0.050	0.227	0.319	0.160	J	1
Carbon tetrachloride	0.078	0.020	0.010	0.491	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.669	0.020	0.010	3.60	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.171	0.050	0.025	0.644	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.316	0.020	0.010	2.14	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.034	0.020	0.010	0.148	0.087	0.043		1
p/m-Xylene	0.099	0.040	0.020	0.430	0.174	0.087		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID:	L1801542-06	Date Collected:	01/15/18 17:58
Client ID:	SG-3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.255	0.020	0.010	1.09	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.040	0.020	0.010	0.174	0.087	0.043	1
1,3,5-Trimethylbenzene	0.060	0.020	0.010	0.295	0.098	0.049	1
1,2,4-Trimethylbenzene	0.149	0.020	0.010	0.733	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	0.018	0.020	0.010	0.108	0.120	0.060	J 1
1,2-Dichlorobenzene	0.016	0.020	0.010	0.096	0.120	0.060	J 1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	20.9	0.050	0.025	110	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	73		60-140
bromochloromethane	82		60-140
chlorobenzene-d5	81		60-140



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-07
 Client ID: SG-6
 Sample Location: BEVERLY, MA
 Sample Depth:
 Matrix: Soil_Vapor
 Analytical Method: 101,TO15-SIM
 Analytical Date: 01/20/18 01:02
 Analyst: MB

Date Collected: 01/15/18 18:37
 Date Received: 01/16/18
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	1.32	0.500	0.034	2.27	0.861	0.059		1
Dichlorodifluoromethane	0.606	0.200	0.100	3.00	0.989	0.494		1
Chloromethane	0.272	0.200	0.100	0.562	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.051	0.020	0.010	0.113	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.013	0.020	0.010	0.034	0.053	0.026	J	1
Ethanol	6.69	5.00	0.157	12.6	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	11.7	1.00	0.500	27.8	2.38	1.19		1
Trichlorofluoromethane	0.296	0.050	0.025	1.66	0.281	0.140		1
Isopropanol	1.64	0.500	0.153	4.03	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.077	0.200	0.063	0.240	0.623	0.196	J	1
Freon-113	0.082	0.050	0.025	0.628	0.383	0.192		1
trans-1,2-Dichloroethene	0.012	0.020	0.010	0.048	0.079	0.040	J	1
1,1-Dichloroethane	0.014	0.020	0.010	0.057	0.081	0.041	J	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	0.125	0.200	0.027	0.440	0.704	0.095	J	1
2-Butanone	6.91	0.500	0.250	20.4	1.47	0.737		1
cis-1,2-Dichloroethene	0.087	0.020	0.010	0.345	0.079	0.040		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID: L1801542-07 Date Collected: 01/15/18 18:37
 Client ID: SG-6 Date Received: 01/16/18
 Sample Location: BEVERLY, MA Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.082	0.500	0.020	0.296	1.80	0.072	J	1
Chloroform	2.03	0.020	0.010	9.91	0.098	0.049		1
Tetrahydrofuran	5.00	0.200	0.037	14.7	0.590	0.109		1
1,2-Dichloroethane	0.057	0.020	0.010	0.231	0.081	0.041		1
n-Hexane	0.075	0.200	0.033	0.264	0.705	0.116	J	1
1,1,1-Trichloroethane	0.061	0.020	0.010	0.333	0.109	0.055		1
Benzene	0.241	0.100	0.050	0.770	0.319	0.160		1
Carbon tetrachloride	0.053	0.020	0.010	0.333	0.126	0.063		1
Cyclohexane	0.034	0.200	0.030	0.117	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.275	0.020	0.010	1.48	0.107	0.054		1
2,2,4-Trimethylpentane	0.059	0.200	0.027	0.276	0.934	0.126	J	1
Heptane	0.057	0.200	0.032	0.234	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.328	0.050	0.025	1.24	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	1.17	0.020	0.010	7.93	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.072	0.020	0.010	0.313	0.087	0.043		1
p/m-Xylene	0.199	0.040	0.020	0.864	0.174	0.087		1



Project Name: CUMMINGS ELLIOTT LANDING**Lab Number:** L1801542**Project Number:** CUMMINGS BEVERLY**Report Date:** 02/02/18**SAMPLE RESULTS**

Lab ID:	L1801542-07	Date Collected:	01/15/18 18:37
Client ID:	SG-6	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.487	0.020	0.010	2.07	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.085	0.020	0.010	0.369	0.087	0.043	1
1,3,5-Trimethylbenzene	0.023	0.020	0.010	0.113	0.098	0.049	1
1,2,4-Trimethylbenzene	0.094	0.020	0.010	0.462	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.129	0.050	0.025	0.676	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	82		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	84		60-140

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/19/18 14:17

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-07 Batch: WG1082320-4							
Chloromethane	ND	0.200	0.100	ND	0.413	0.207	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175	1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026	1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039	1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026	1
Ethanol	ND	5.00	0.157	ND	9.42	0.296	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101	1
Acetone	ND	1.00	0.500	ND	2.38	1.19	1
Trichlorofluoromethane	ND	0.050	0.025	ND	0.281	0.140	1
Isopropanol	ND	0.500	0.153	ND	1.23	0.376	1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063	1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196	1
Freon-113	ND	0.050	0.025	ND	0.383	0.192	1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036	1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095	1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737	1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072	1
Chloroform	ND	0.020	0.010	ND	0.098	0.049	1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109	1



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/19/18 14:17

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-07 Batch: WG1082320-4							
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Benzene	ND	0.100	0.050	ND	0.319	0.160	1
Carbon tetrachloride	ND	0.020	0.010	ND	0.126	0.063	1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046	1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180	1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126	1
Heptane	ND	0.200	0.032	ND	0.820	0.131	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Toluene	ND	0.050	0.025	ND	0.188	0.094	1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085	1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077	1
Tetrachloroethene	ND	0.020	0.010	ND	0.136	0.068	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046	1
Ethylbenzene	ND	0.020	0.010	ND	0.087	0.043	1
p/m-Xylene	ND	0.040	0.020	ND	0.174	0.087	1



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/19/18 14:17

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-07 Batch: WG1082320-4							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	ND	0.020	0.010	ND	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	ND	0.020	0.010	ND	0.087	0.043	1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
1,2,4-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	0.016	0.050	0.010	0.119	0.371	0.074	J 1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1



Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07 Batch: WG1082320-3								
Propylene	66	Q	-	-	70-130	-	-	-
Dichlorodifluoromethane	66	Q	-	-	70-130	-	-	-
Chloromethane	86		-	-	70-130	-	-	-
1,2-Dichloro-1,1,2,2-tetrafluoroethane	105		-	-	70-130	-	-	-
Vinyl chloride	97		-	-	70-130	-	-	-
1,3-Butadiene	98		-	-	70-130	-	-	-
Bromomethane	112		-	-	70-130	-	-	-
Chloroethane	97		-	-	70-130	-	-	-
Ethyl Alcohol	82		-	-	70-130	-	-	-
Vinyl bromide	106		-	-	70-130	-	-	-
Acetone	109		-	-	50-150	-	-	-
Trichlorofluoromethane	124		-	-	70-130	-	-	-
iso-Propyl Alcohol	107		-	-	70-130	-	-	-
1,1-Dichloroethene	105		-	-	70-130	-	-	-
tert-Butyl Alcohol ¹	85		-	-	70-130	-	-	-
Methylene chloride	108		-	-	70-130	-	-	-
3-Chloropropene	99		-	-	70-130	-	-	-
Carbon disulfide	96		-	-	70-130	-	-	-
1,1,2-Trichloro-1,2,2-Trifluoroethane	112		-	-	70-130	-	-	-
Halothane	114		-	-	70-130	-	-	-
trans-1,2-Dichloroethene	90		-	-	70-130	-	-	-
1,1-Dichloroethane	93		-	-	70-130	-	-	-
Methyl tert butyl ether	78		-	-	70-130	-	-	-

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07 Batch: WG1082320-3								
Vinyl acetate	87		-		70-130	-		
2-Butanone	79		-		70-130	-		
cis-1,2-Dichloroethene	83		-		70-130	-		
Ethyl Acetate	94		-		70-130	-		
Chloroform	104		-		70-130	-		
Tetrahydrofuran	70		-		70-130	-		
1,2-Dichloroethane	96		-		70-130	-		
n-Hexane	76		-		70-130	-		
1,1,1-Trichloroethane	102		-		70-130	-		
Benzene	84		-		70-130	-		
Carbon tetrachloride	108		-		70-130	-		
Cyclohexane	74		-		70-130	-		
Dibromomethane ¹	85		-		70-130	-		
1,2-Dichloropropane	87		-		70-130	-		
Bromodichloromethane	100		-		70-130	-		
1,4-Dioxane	88		-		50-150	-		
Trichloroethene	94		-		70-130	-		
2,2,4-Trimethylpentane	83		-		70-130	-		
cis-1,3-Dichloropropene	83		-		70-130	-		
4-Methyl-2-pentanone	87		-		70-130	-		
trans-1,3-Dichloropropene	73		-		70-130	-		
1,1,2-Trichloroethane	100		-		70-130	-		
Toluene	88		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07 Batch: WG1082320-3								
2-Hexanone	85		-		70-130	-		
Dibromochloromethane	114		-		70-130	-		
1,2-Dibromoethane	101		-		70-130	-		
Tetrachloroethene	105		-		70-130	-		
Chlorobenzene	102		-		70-130	-		
Ethylbenzene	89		-		70-130	-		
p/m-Xylene	96		-		70-130	-		
Bromoform	120		-		70-130	-		
Styrene	89		-		70-130	-		
1,1,2,2-Tetrachloroethane	106		-		70-130	-		
o-Xylene	96		-		70-130	-		
1,2,3-Trichloropropane ¹	93		-		70-130	-		
Bromobenzene ¹	87		-		70-130	-		
1,3,5-Trimethylbenzene	104		-		70-130	-		
1,2,4-Trimethylbenzene	109		-		70-130	-		
Benzyl chloride	99		-		70-130	-		
1,3-Dichlorobenzene	121		-		70-130	-		
1,4-Dichlorobenzene	117		-		70-130	-		
1,2-Dichlorobenzene	118		-		70-130	-		
1,2,4-Trichlorobenzene	133		-		50-150	-		
Naphthalene	110		-		50-150	-		
1,2,3-Trichlorobenzene	121		-		70-130	-		
Hexachlorobutadiene	131		-		50-150	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVER

Lab Number: L1801542
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1082320-5 QC Sample: L1801542-04 Client ID: DUPLICATE						
Propylene	0.222J	0.231J	ppbV	NC		25
Dichlorodifluoromethane	0.585	0.338	ppbV	54	Q	25
Chloromethane	0.226	0.223	ppbV	1		25
Freon-114	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	0.016J	0.017J	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	0.015J	0.013J	ppbV	NC		25
Ethanol	0.798J	0.827J	ppbV	NC		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	1.90	1.91	ppbV	1		25
Trichlorofluoromethane	0.284	0.284	ppbV	0		25
Isopropanol	0.230J	0.231J	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	0.083J	0.086J	ppbV	NC		25
Freon-113	0.078	0.078	ppbV	0		25
trans-1,2-Dichloroethene	0.014J	0.014J	ppbV	NC		25
1,1-Dichloroethane	0.039	0.039	ppbV	0		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVER

Lab Number: L1801542
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1082320-5 QC Sample: L1801542-04 Client ID: DUPLICATE						
Vinyl acetate	ND	ND	ppbV	NC		25
2-Butanone	0.340J	0.361J	ppbV	NC		25
cis-1,2-Dichloroethene	0.065	0.065	ppbV	0		25
Ethyl Acetate	ND	0.024J	ppbV	NC		25
Chloroform	0.126	0.130	ppbV	3		25
Tetrahydrofuran	0.562	0.566	ppbV	1		25
1,2-Dichloroethane	0.017J	0.017J	ppbV	NC		25
n-Hexane	0.036J	0.037J	ppbV	NC		25
1,1,1-Trichloroethane	0.047	0.048	ppbV	2		25
Benzene	0.097J	0.100	ppbV	NC		25
Carbon tetrachloride	0.060	0.060	ppbV	0		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
Trichloroethene	0.634	0.664	ppbV	5		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	ND	ND	ppbV	NC		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVER

Lab Number: L1801542
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1082320-5 QC Sample: L1801542-04 Client ID: DUPLICATE						
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
Toluene	0.118	0.123	ppbV	4		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Tetrachloroethene	0.341	0.357	ppbV	5		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	0.025	0.025	ppbV	0		25
p/m-Xylene	0.075	0.077	ppbV	3		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	0.171	0.175	ppbV	2		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	0.029	0.029	ppbV	0		25
1,3,5-Trimethylbenzene	0.010J	0.011J	ppbV	NC		25
1,2,4-Trimethylbenzene	0.042	0.044	ppbV	5		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Naphthalene	3.01	3.22	ppbV	7		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVER

Lab Number: L1801542
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1082320-5 QC Sample: L1801542-04 Client ID: DUPLICATE						
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801542-01	Date Collected:	01/15/18 17:05
Client ID:	SG-2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 17:26		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	36		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	59		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	88		50-200
Bromoform	98		50-200
Chlorobenzene-d5	90		50-200



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801542-02	Date Collected:	01/15/18 17:45
Client ID:	SG-5	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 17:59		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	19		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	100		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	76		50-200
Bromoform	89		50-200
Chlorobenzene-d5	79		50-200



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801542-03	Date Collected:	01/15/18 18:42
Client ID:	SG-4	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 18:31		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	16		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	42		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	79		50-200
Bromoform	90		50-200
Chlorobenzene-d5	79		50-200

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801542-04	Date Collected:	01/15/18 18:42
Client ID:	DUPLICATE	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 19:04		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	13		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	18		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	34		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	79		50-200
Bromoform	93		50-200
Chlorobenzene-d5	81		50-200



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801542-05	Date Collected:	01/15/18 16:55
Client ID:	SG-1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 20:09		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	21%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	1.3		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	21		ug/m3	10	10.	1
Toluene	2.3		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	1.2		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	85		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	78		50-200
Bromoform	89		50-200
Chlorobenzene-d5	75		50-200



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801542-06	Date Collected:	01/15/18 17:58
Client ID:	SG-3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 20:42		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	40		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	120		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	120		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	72		50-200
Bromoform	88		50-200
Chlorobenzene-d5	82		50-200



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801542-07	Date Collected:	01/15/18 18:37
Client ID:	SG-6	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 01:02		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	22%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	0.76		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	34		ug/m3	10	10.	1
Toluene	1.2		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	240		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	81		50-200
Bromoform	92		50-200
Chlorobenzene-d5	86		50-200



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 96,APH
Analytical Date: 01/19/18 14:17
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbons in Air - Mansfield Lab for sample(s):	01-07	Batch:	WG1082318-4		
1,3-Butadiene	ND	ug/m3	0.50	0.50	
Methyl tert butyl ether	ND	ug/m3	0.70	0.70	
Benzene	ND	ug/m3	0.60	0.60	
C5-C8 Aliphatics, Adjusted	ND	ug/m3	10	10.	
Toluene	ND	ug/m3	0.90	0.90	
Ethylbenzene	ND	ug/m3	0.90	0.90	
p/m-Xylene	ND	ug/m3	0.90	0.90	
o-Xylene	ND	ug/m3	0.90	0.90	
Naphthalene	ND	ug/m3	1.1	1.1	
C9-C12 Aliphatics, Adjusted	ND	ug/m3	10	10.	
C9-C10 Aromatics Total	ND	ug/m3	10	10.	

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbons in Air - Mansfield Lab Associated sample(s): 01-07 Batch: WG1082318-3								
1,3-Butadiene	87		-		70-130	-		
Methyl tert butyl ether	87		-		70-130	-		
Benzene	91		-		70-130	-		
C5-C8 Aliphatics, Adjusted	92		-		70-130	-		
Toluene	95		-		70-130	-		
Ethylbenzene	95		-		70-130	-		
p/m-Xylene	96		-		70-130	-		
o-Xylene	101		-		70-130	-		
Naphthalene	131		-		50-150	-		
C9-C12 Aliphatics, Adjusted	99		-		70-130	-		
C9-C10 Aromatics Total	90		-		70-130	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVER

Lab Number: L1801542
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbons in Air - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1082318-5 QC Sample: L1801542-04 Client ID: DUPLICATE						
1,3-Butadiene	ND	ND	ug/m3	NC		30
Methyl tert butyl ether	ND	ND	ug/m3	NC		30
Benzene	ND	ND	ug/m3	NC		30
C5-C8 Aliphatics, Adjusted	13	ND	ug/m3	NC		30
Toluene	ND	ND	ug/m3	NC		30
Ethylbenzene	ND	ND	ug/m3	NC		30
p/m-Xylene	ND	ND	ug/m3	NC		30
o-Xylene	ND	ND	ug/m3	NC		30
Naphthalene	18	19	ug/m3	5		30
C9-C12 Aliphatics, Adjusted	34	34	ug/m3	0		30
C9-C10 Aromatics Total	ND	ND	ug/m3	NC		30

Project Name: CUMMINGS ELLIOTT LANDING

Lab Number: L1801542

Project Number: CUMMINGS BEVERLY

Report Date: 02/02/18

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1801542-01	SG-2	0763	Flow 1	01/11/18	257095		Pass	-	-	-	70	84	18
L1801542-01	SG-2	373	2.7L Can	01/11/18	257092	L1800390-01	Pass	-29.7	-6.4	-	-	-	-
L1801542-02	SG-5	0257	Flow 1	01/11/18	257092		-	-	-	Pass	72.0	81	12
L1801542-02	SG-5	395	2.7L Can	01/11/18	257092	L1800390-01	Pass	-30.0	-7.1	-	-	-	-
L1801542-03	SG-4	0830	Flow 2	01/11/18	257092		-	-	-	Pass	72.0	84	15
L1801542-03	SG-4	462	2.7L Can	01/11/18	257092	L1800390-01	Pass	-30.0	-4.3	-	-	-	-
L1801542-04	DUPLICATE	0464	Flow 2	01/11/18	257092		-	-	-	Pass	72.0	81	12
L1801542-04	DUPLICATE	2208	2.7L Can	01/11/18	257092	L1800302-01	Pass	-29.7	-8.9	-	-	-	-
L1801542-05	SG-1	0336	Flow 1	01/11/18	257092		-	-	-	Pass	72.0	89	21
L1801542-05	SG-1	391	2.7L Can	01/11/18	257092	L1800390-01	Pass	-29.7	-7.3	-	-	-	-
L1801542-06	SG-3	0045	Flow 1	01/11/18	257092		-	-	-	Pass	72.0	86	18
L1801542-06	SG-3	333	2.7L Can	01/11/18	257092	L1800390-01	Pass	-30.0	-7.4	-	-	-	-
L1801542-07	SG-6	01012	Flow 2	01/11/18	257092		Pass	-	-	Pass	72.0	90	22
L1801542-07	SG-6	410	2.7L Can	01/11/18	257092	L1800302-01	Pass	-30.0	-8.1	-	-	-	-
L1801542-08	UNUSED CAN #416	0151	Flow 3	01/11/18	257095		Pass	-	-	-	70	80	13

Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800302

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800302-01	Date Collected:	01/03/18 16:00
Client ID:	CAN 404 SHELF 1	Date Received:	01/05/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15		
Analytical Date:	01/05/18 16:35		
Analyst:	RY		

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
Chlorodifluoromethane	ND	0.200	0.063	ND	0.707	0.221	1
Propylene	ND	0.500	0.093	ND	0.861	0.160	1
Propane	ND	0.500	0.114	ND	0.902	0.206	1
Dichlorodifluoromethane	ND	0.200	0.047	ND	0.989	0.230	1
Chloromethane	ND	0.200	0.096	ND	0.413	0.198	1
Freon-114	ND	0.200	0.042	ND	1.40	0.293	1
Methanol	ND	5.00	0.736	ND	6.55	0.964	1
Vinyl chloride	ND	0.200	0.039	ND	0.511	0.101	1
1,3-Butadiene	ND	0.200	0.080	ND	0.442	0.177	1
Butane	ND	0.200	0.044	ND	0.475	0.105	1
Bromomethane	ND	0.200	0.070	ND	0.777	0.270	1
Chloroethane	ND	0.200	0.077	ND	0.528	0.202	1
Ethanol	ND	5.00	0.542	ND	9.42	1.02	1
Dichlorofluoromethane	ND	0.200	0.057	ND	0.842	0.241	1
Vinyl bromide	ND	0.200	0.070	ND	0.874	0.306	1
Acrolein	ND	0.500	0.114	ND	1.15	0.261	1
Acetone	ND	1.00	0.165	ND	2.38	0.392	1
Acetonitrile	ND	0.200	0.076	ND	0.336	0.128	1
Trichlorofluoromethane	ND	0.200	0.042	ND	1.12	0.234	1
Isopropanol	ND	0.500	0.084	ND	1.23	0.206	1
Acrylonitrile	ND	0.500	0.079	ND	1.09	0.171	1
Pentane	ND	0.200	0.048	ND	0.590	0.140	1
Ethyl ether	ND	0.200	0.059	ND	0.606	0.179	1
1,1-Dichloroethene	ND	0.200	0.057	ND	0.793	0.224	1
Tertiary butyl Alcohol	ND	0.500	0.060	ND	1.52	0.182	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800302

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800302-01 Date Collected: 01/03/18 16:00
 Client ID: CAN 404 SHELF 1 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
Methylene chloride	ND	0.500	0.062	ND	1.74	0.216	1
3-Chloropropene	ND	0.200	0.081	ND	0.626	0.254	1
Carbon disulfide	ND	0.200	0.035	ND	0.623	0.107	1
Freon-113	ND	0.200	0.051	ND	1.53	0.392	1
trans-1,2-Dichloroethene	ND	0.200	0.074	ND	0.793	0.293	1
1,1-Dichloroethane	ND	0.200	0.077	ND	0.809	0.312	1
Methyl tert butyl ether	ND	0.200	0.045	ND	0.721	0.163	1
Vinyl acetate	ND	1.00	0.057	ND	3.52	0.200	1
2-Butanone	ND	0.500	0.052	ND	1.47	0.154	1
cis-1,2-Dichloroethene	ND	0.200	0.059	ND	0.793	0.233	1
Ethyl Acetate	ND	0.500	0.131	ND	1.80	0.472	1
Chloroform	ND	0.200	0.045	ND	0.977	0.221	1
Tetrahydrofuran	ND	0.500	0.061	ND	1.47	0.179	1
2,2-Dichloropropane	ND	0.200	0.058	ND	0.924	0.269	1
1,2-Dichloroethane	ND	0.200	0.055	ND	0.809	0.223	1
n-Hexane	ND	0.200	0.052	ND	0.705	0.183	1
Diisopropyl ether	ND	0.200	0.066	ND	0.836	0.274	1
tert-Butyl Ethyl Ether	ND	0.200	0.052	ND	0.836	0.215	1
1,1,1-Trichloroethane	ND	0.200	0.057	ND	1.09	0.311	1
1,1-Dichloropropene	ND	0.200	0.072	ND	0.908	0.325	1
Benzene	ND	0.200	0.054	ND	0.639	0.172	1
Carbon tetrachloride	ND	0.200	0.047	ND	1.26	0.296	1
Cyclohexane	ND	0.200	0.066	ND	0.688	0.226	1
tert-Amyl Methyl Ether	ND	0.200	0.080	ND	0.836	0.332	1
Dibromomethane	ND	0.200	0.048	ND	1.42	0.338	1
1,2-Dichloropropane	ND	0.200	0.070	ND	0.924	0.322	1
Bromodichloromethane	ND	0.200	0.066	ND	1.34	0.439	1
1,4-Dioxane	ND	0.200	0.078	ND	0.721	0.281	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800302

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800302-01 Date Collected: 01/03/18 16:00
 Client ID: CAN 404 SHELF 1 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
Trichloroethene	ND	0.200	0.071	ND	1.07	0.382	1
2,2,4-Trimethylpentane	ND	0.200	0.066	ND	0.934	0.308	1
Methyl Methacrylate	ND	0.500	0.147	ND	2.05	0.602	1
Heptane	ND	0.200	0.055	ND	0.820	0.227	1
cis-1,3-Dichloropropene	ND	0.200	0.075	ND	0.908	0.338	1
4-Methyl-2-pentanone	ND	0.500	0.061	ND	2.05	0.249	1
trans-1,3-Dichloropropene	ND	0.200	0.069	ND	0.908	0.315	1
1,1,2-Trichloroethane	ND	0.200	0.067	ND	1.09	0.364	1
Toluene	ND	0.200	0.063	ND	0.754	0.237	1
1,3-Dichloropropane	ND	0.200	0.078	ND	0.924	0.359	1
2-Hexanone	ND	0.200	0.060	ND	0.820	0.248	1
Dibromochloromethane	ND	0.200	0.075	ND	1.70	0.636	1
1,2-Dibromoethane	ND	0.200	0.078	ND	1.54	0.599	1
Butyl acetate	ND	0.500	0.114	ND	2.38	0.542	1
Octane	ND	0.200	0.042	ND	0.934	0.197	1
Tetrachloroethene	ND	0.200	0.076	ND	1.36	0.514	1
1,1,1,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
Chlorobenzene	ND	0.200	0.079	ND	0.921	0.363	1
Ethylbenzene	ND	0.200	0.056	ND	0.869	0.241	1
p/m-Xylene	ND	0.400	0.139	ND	1.74	0.604	1
Bromoform	ND	0.200	0.052	ND	2.07	0.541	1
Styrene	ND	0.200	0.080	ND	0.852	0.340	1
1,1,2,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
o-Xylene	ND	0.200	0.063	ND	0.869	0.274	1
1,2,3-Trichloropropane	ND	0.200	0.077	ND	1.21	0.462	1
Nonane	ND	0.200	0.064	ND	1.05	0.338	1
Isopropylbenzene	ND	0.200	0.043	ND	0.983	0.211	1
Bromobenzene	ND	0.200	0.079	ND	0.793	0.313	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800302

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800302-01 Date Collected: 01/03/18 16:00
 Client ID: CAN 404 SHELF 1 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
2-Chlorotoluene	ND	0.200	0.049	ND	1.04	0.252	1
n-Propylbenzene	ND	0.200	0.056	ND	0.983	0.275	1
4-Chlorotoluene	ND	0.200	0.076	ND	1.04	0.396	1
4-Ethyltoluene	ND	0.200	0.078	ND	0.983	0.381	1
1,3,5-Trimethylbenzene	ND	0.200	0.058	ND	0.983	0.287	1
tert-Butylbenzene	ND	0.200	0.040	ND	1.10	0.221	1
1,2,4-Trimethylbenzene	ND	0.200	0.069	ND	0.983	0.341	1
Decane	ND	0.200	0.048	ND	1.16	0.282	1
Benzyl chloride	ND	0.200	0.065	ND	1.04	0.334	1
1,3-Dichlorobenzene	ND	0.200	0.064	ND	1.20	0.383	1
1,4-Dichlorobenzene	ND	0.200	0.042	ND	1.20	0.251	1
sec-Butylbenzene	ND	0.200	0.073	ND	1.10	0.401	1
p-Isopropyltoluene	ND	0.200	0.061	ND	1.10	0.334	1
1,2-Dichlorobenzene	ND	0.200	0.061	ND	1.20	0.369	1
n-Butylbenzene	ND	0.200	0.064	ND	1.10	0.351	1
1,2-Dibromo-3-chloropropane	ND	0.200	0.074	ND	1.93	0.719	1
Undecane	ND	0.200	0.053	ND	1.28	0.338	1
Dodecane	ND	0.200	0.056	ND	1.39	0.393	1
1,2,4-Trichlorobenzene	ND	0.200	0.061	ND	1.48	0.454	1
Naphthalene	ND	0.200	0.043	ND	1.05	0.223	1
1,2,3-Trichlorobenzene	ND	0.200	0.043	ND	1.48	0.320	1
Hexachlorobutadiene	ND	0.200	0.073	ND	2.13	0.781	1

Results	Qualifier	Units	RDL	Dilution Factor
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Tentatively Identified Compounds

No Tentatively Identified Compounds



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800302

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800302-01 Date Collected: 01/03/18 16:00
 Client ID: CAN 404 SHELF 1 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	80		60-140
Bromochloromethane	89		60-140
chlorobenzene-d5	81		60-140

Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800302

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800302-01
 Client ID: CAN 404 SHELF 1
 Sample Location:
 Sample Depth:
 Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 01/05/18 16:35
 Analyst: RY

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Dichlorodifluoromethane	ND	0.200	0.011	ND	0.989	0.055	1
Chloromethane	ND	0.200	0.048	ND	0.413	0.099	1
Freon-114	ND	0.050	0.012	ND	0.349	0.081	1
Vinyl chloride	ND	0.020	0.006	ND	0.051	0.015	1
1,3-Butadiene	ND	0.020	0.007	ND	0.044	0.016	1
Bromomethane	ND	0.020	0.008	ND	0.078	0.031	1
Chloroethane	ND	0.100	0.017	ND	0.264	0.045	1
Acetone	ND	1.00	0.366	ND	2.38	0.869	1
Trichlorofluoromethane	ND	0.050	0.011	ND	0.281	0.064	1
Acrylonitrile	ND	0.500	0.025	ND	1.09	0.054	1
1,1-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
Freon-113	ND	0.050	0.013	ND	0.383	0.097	1
Halothane	ND	0.050	0.008	ND	0.404	0.065	1
trans-1,2-Dichloroethene	ND	0.020	0.006	ND	0.079	0.024	1
1,1-Dichloroethane	ND	0.020	0.007	ND	0.081	0.028	1
Methyl tert butyl ether	ND	0.200	0.006	ND	0.721	0.022	1
2-Butanone	ND	0.500	0.016	ND	1.47	0.047	1
cis-1,2-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Chloroform	ND	0.020	0.005	ND	0.098	0.024	1
1,2-Dichloroethane	ND	0.020	0.005	ND	0.081	0.020	1
1,1,1-Trichloroethane	ND	0.020	0.006	ND	0.109	0.033	1
Benzene	ND	0.100	0.019	ND	0.319	0.061	1
Carbon tetrachloride	ND	0.020	0.007	ND	0.126	0.044	1
1,2-Dichloropropane	ND	0.020	0.008	ND	0.092	0.037	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800302

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800302-01 Date Collected: 01/03/18 16:00
 Client ID: CAN 404 SHELF 1 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
Bromodichloromethane	ND	0.020	0.008	ND	0.134	0.054	1
1,4-Dioxane	ND	0.100	0.014	ND	0.360	0.051	1
Trichloroethene	ND	0.020	0.007	ND	0.107	0.038	1
cis-1,3-Dichloropropene	ND	0.020	0.006	ND	0.091	0.027	1
4-Methyl-2-pentanone	ND	0.500	0.005	ND	2.05	0.021	1
trans-1,3-Dichloropropene	ND	0.020	0.008	ND	0.091	0.036	1
1,1,2-Trichloroethane	ND	0.020	0.004	ND	0.109	0.022	1
Toluene	ND	0.050	0.006	ND	0.188	0.023	1
Dibromochloromethane	ND	0.020	0.008	ND	0.170	0.068	1
1,2-Dibromoethane	ND	0.020	0.008	ND	0.154	0.062	1
Tetrachloroethene	ND	0.020	0.008	ND	0.136	0.054	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.006	ND	0.137	0.041	1
Chlorobenzene	ND	0.100	0.007	ND	0.461	0.032	1
Ethylbenzene	ND	0.020	0.007	ND	0.087	0.030	1
p/m-Xylene	ND	0.040	0.007	ND	0.174	0.030	1
Bromoform	ND	0.020	0.015	ND	0.207	0.155	1
Styrene	ND	0.020	0.007	ND	0.085	0.030	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.007	ND	0.137	0.048	1
o-Xylene	ND	0.020	0.008	ND	0.087	0.035	1
Isopropylbenzene	ND	0.200	0.007	ND	0.983	0.034	1
4-Ethyltoluene	ND	0.020	0.010	ND	0.098	0.049	1
1,3,5-Trimethylbenzene	ND	0.020	0.005	ND	0.098	0.025	1
1,2,4-Trimethylbenzene	ND	0.020	0.007	ND	0.098	0.034	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
1,4-Dichlorobenzene	ND	0.020	0.008	ND	0.120	0.048	1
sec-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
p-Isopropyltoluene	ND	0.200	0.007	ND	1.10	0.038	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800302

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800302-01 Date Collected: 01/03/18 16:00
 Client ID: CAN 404 SHELF 1 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air by SIM - Mansfield Lab							
1,2-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
n-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.008	ND	0.262	0.042	1
1,2,3-Trichlorobenzene	ND	0.050	0.019	ND	0.371	0.141	1
Hexachlorobutadiene	ND	0.050	0.007	ND	0.533	0.075	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	81		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	83		60-140

Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800390

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800390-01	Date Collected:	01/05/18 09:00
Client ID:	CAN 347 SHELF 3	Date Received:	01/05/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15		
Analytical Date:	01/06/18 16:58		
Analyst:	MB		

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
Chlorodifluoromethane	ND	0.200	0.063	ND	0.707	0.221	1
Propylene	ND	0.500	0.093	ND	0.861	0.160	1
Dichlorodifluoromethane	ND	0.200	0.047	ND	0.989	0.230	1
Chloromethane	ND	0.200	0.096	ND	0.413	0.198	1
Freon-114	ND	0.200	0.042	ND	1.40	0.293	1
Methanol	ND	5.00	0.736	ND	6.55	0.964	1
Vinyl chloride	ND	0.200	0.039	ND	0.511	0.101	1
1,3-Butadiene	ND	0.200	0.080	ND	0.442	0.177	1
Butane	ND	0.200	0.044	ND	0.475	0.105	1
Bromomethane	ND	0.200	0.070	ND	0.777	0.270	1
Chloroethane	ND	0.200	0.077	ND	0.528	0.202	1
Ethanol	ND	5.00	0.542	ND	9.42	1.02	1
Dichlorofluoromethane	ND	0.200	0.057	ND	0.842	0.241	1
Vinyl bromide	ND	0.200	0.070	ND	0.874	0.306	1
Acrolein	ND	0.500	0.114	ND	1.15	0.261	1
Acetone	ND	1.00	0.165	ND	2.38	0.392	1
Acetonitrile	ND	0.200	0.076	ND	0.336	0.128	1
Trichlorofluoromethane	ND	0.200	0.042	ND	1.12	0.234	1
Isopropanol	ND	0.500	0.084	ND	1.23	0.206	1
Acrylonitrile	ND	0.500	0.079	ND	1.09	0.171	1
Pentane	ND	0.200	0.048	ND	0.590	0.140	1
Ethyl ether	ND	0.200	0.059	ND	0.606	0.179	1
1,1-Dichloroethene	ND	0.200	0.057	ND	0.793	0.224	1
Tertiary butyl Alcohol	ND	0.500	0.060	ND	1.52	0.182	1
Methylene chloride	ND	0.500	0.062	ND	1.74	0.216	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800390

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800390-01 Date Collected: 01/05/18 09:00
 Client ID: CAN 347 SHELF 3 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
3-Chloropropene	ND	0.200	0.081	ND	0.626	0.254	1
Carbon disulfide	ND	0.200	0.035	ND	0.623	0.107	1
Freon-113	ND	0.200	0.051	ND	1.53	0.392	1
trans-1,2-Dichloroethene	ND	0.200	0.074	ND	0.793	0.293	1
1,1-Dichloroethane	ND	0.200	0.077	ND	0.809	0.312	1
Methyl tert butyl ether	ND	0.200	0.045	ND	0.721	0.163	1
Vinyl acetate	ND	1.00	0.057	ND	3.52	0.200	1
2-Butanone	ND	0.500	0.052	ND	1.47	0.154	1
cis-1,2-Dichloroethene	ND	0.200	0.059	ND	0.793	0.233	1
Ethyl Acetate	ND	0.500	0.131	ND	1.80	0.472	1
Chloroform	ND	0.200	0.045	ND	0.977	0.221	1
Tetrahydrofuran	ND	0.500	0.061	ND	1.47	0.179	1
2,2-Dichloropropane	ND	0.200	0.058	ND	0.924	0.269	1
1,2-Dichloroethane	ND	0.200	0.055	ND	0.809	0.223	1
n-Hexane	ND	0.200	0.052	ND	0.705	0.183	1
Diisopropyl ether	ND	0.200	0.066	ND	0.836	0.274	1
tert-Butyl Ethyl Ether	ND	0.200	0.052	ND	0.836	0.215	1
1,1,1-Trichloroethane	ND	0.200	0.057	ND	1.09	0.311	1
1,1-Dichloropropene	ND	0.200	0.072	ND	0.908	0.325	1
Benzene	ND	0.200	0.054	ND	0.639	0.172	1
Carbon tetrachloride	ND	0.200	0.047	ND	1.26	0.296	1
Cyclohexane	ND	0.200	0.066	ND	0.688	0.226	1
tert-Amyl Methyl Ether	ND	0.200	0.080	ND	0.836	0.332	1
Dibromomethane	ND	0.200	0.048	ND	1.42	0.338	1
1,2-Dichloropropane	ND	0.200	0.070	ND	0.924	0.322	1
Bromodichloromethane	ND	0.200	0.066	ND	1.34	0.439	1
1,4-Dioxane	ND	0.200	0.078	ND	0.721	0.281	1
Trichloroethene	ND	0.200	0.071	ND	1.07	0.382	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800390

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800390-01 Date Collected: 01/05/18 09:00
 Client ID: CAN 347 SHELF 3 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
2,2,4-Trimethylpentane	ND	0.200	0.066	ND	0.934	0.308	1
Methyl Methacrylate	ND	0.500	0.147	ND	2.05	0.602	1
Heptane	ND	0.200	0.055	ND	0.820	0.227	1
cis-1,3-Dichloropropene	ND	0.200	0.075	ND	0.908	0.338	1
4-Methyl-2-pentanone	ND	0.500	0.061	ND	2.05	0.249	1
trans-1,3-Dichloropropene	ND	0.200	0.069	ND	0.908	0.315	1
1,1,2-Trichloroethane	ND	0.200	0.067	ND	1.09	0.364	1
Toluene	ND	0.200	0.063	ND	0.754	0.237	1
1,3-Dichloropropane	ND	0.200	0.078	ND	0.924	0.359	1
2-Hexanone	ND	0.200	0.060	ND	0.820	0.248	1
Dibromochloromethane	ND	0.200	0.075	ND	1.70	0.636	1
1,2-Dibromoethane	ND	0.200	0.078	ND	1.54	0.599	1
Butyl acetate	ND	0.500	0.114	ND	2.38	0.542	1
Octane	ND	0.200	0.042	ND	0.934	0.197	1
Tetrachloroethene	ND	0.200	0.076	ND	1.36	0.514	1
1,1,1,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
Chlorobenzene	ND	0.200	0.079	ND	0.921	0.363	1
Ethylbenzene	ND	0.200	0.056	ND	0.869	0.241	1
p/m-Xylene	ND	0.400	0.139	ND	1.74	0.604	1
Bromoform	ND	0.200	0.052	ND	2.07	0.541	1
Styrene	ND	0.200	0.080	ND	0.852	0.340	1
1,1,2,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
o-Xylene	ND	0.200	0.063	ND	0.869	0.274	1
1,2,3-Trichloropropane	ND	0.200	0.077	ND	1.21	0.462	1
Nonane	ND	0.200	0.064	ND	1.05	0.338	1
Isopropylbenzene	ND	0.200	0.043	ND	0.983	0.211	1
Bromobenzene	ND	0.200	0.079	ND	0.793	0.313	1
2-Chlorotoluene	ND	0.200	0.049	ND	1.04	0.252	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800390

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800390-01 Date Collected: 01/05/18 09:00
 Client ID: CAN 347 SHELF 3 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
n-Propylbenzene	ND	0.200	0.056	ND	0.983	0.275	1
4-Chlorotoluene	ND	0.200	0.076	ND	1.04	0.396	1
4-Ethyltoluene	ND	0.200	0.078	ND	0.983	0.381	1
1,3,5-Trimethylbenzene	ND	0.200	0.058	ND	0.983	0.287	1
tert-Butylbenzene	ND	0.200	0.040	ND	1.10	0.221	1
1,2,4-Trimethylbenzene	ND	0.200	0.069	ND	0.983	0.341	1
Decane	ND	0.200	0.048	ND	1.16	0.282	1
Benzyl chloride	ND	0.200	0.065	ND	1.04	0.334	1
1,3-Dichlorobenzene	ND	0.200	0.064	ND	1.20	0.383	1
1,4-Dichlorobenzene	ND	0.200	0.042	ND	1.20	0.251	1
sec-Butylbenzene	ND	0.200	0.073	ND	1.10	0.401	1
p-Isopropyltoluene	ND	0.200	0.061	ND	1.10	0.334	1
1,2-Dichlorobenzene	ND	0.200	0.061	ND	1.20	0.369	1
n-Butylbenzene	ND	0.200	0.064	ND	1.10	0.351	1
1,2-Dibromo-3-chloropropane	ND	0.200	0.074	ND	1.93	0.719	1
Undecane	ND	0.200	0.053	ND	1.28	0.338	1
Dodecane	ND	0.200	0.056	ND	1.39	0.393	1
1,2,4-Trichlorobenzene	ND	0.200	0.061	ND	1.48	0.454	1
Naphthalene	ND	0.200	0.043	ND	1.05	0.223	1
1,2,3-Trichlorobenzene	ND	0.200	0.043	ND	1.48	0.320	1
Hexachlorobutadiene	ND	0.200	0.073	ND	2.13	0.781	1

	Results	Qualifier	Units	RDL	Dilution Factor
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Tentatively Identified Compounds

No Tentatively Identified Compounds



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800390

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800390-01 Date Collected: 01/05/18 09:00
 Client ID: CAN 347 SHELF 3 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	86		60-140
Bromochloromethane	96		60-140
chlorobenzene-d5	88		60-140



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800390

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800390-01
 Client ID: CAN 347 SHELF 3
 Sample Location:
 Sample Depth:
 Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 01/06/18 16:58
 Analyst: MB

Date Collected: 01/05/18 09:00
 Date Received: 01/05/18
 Field Prep: Not Specified

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Dichlorodifluoromethane	ND	0.200	0.011	ND	0.989	0.055	1
Chloromethane	ND	0.200	0.048	ND	0.413	0.099	1
Freon-114	ND	0.050	0.012	ND	0.349	0.081	1
Vinyl chloride	ND	0.020	0.006	ND	0.051	0.015	1
1,3-Butadiene	ND	0.020	0.007	ND	0.044	0.016	1
Bromomethane	ND	0.020	0.008	ND	0.078	0.031	1
Chloroethane	ND	0.100	0.017	ND	0.264	0.045	1
Acetone	ND	1.00	0.366	ND	2.38	0.869	1
Trichlorofluoromethane	ND	0.050	0.011	ND	0.281	0.064	1
Acrylonitrile	ND	0.500	0.025	ND	1.09	0.054	1
1,1-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
Freon-113	ND	0.050	0.013	ND	0.383	0.097	1
Halothane	ND	0.050	0.008	ND	0.404	0.065	1
trans-1,2-Dichloroethene	ND	0.020	0.006	ND	0.079	0.024	1
1,1-Dichloroethane	ND	0.020	0.007	ND	0.081	0.028	1
Methyl tert butyl ether	ND	0.200	0.006	ND	0.721	0.022	1
2-Butanone	ND	0.500	0.016	ND	1.47	0.047	1
cis-1,2-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Chloroform	ND	0.020	0.005	ND	0.098	0.024	1
1,2-Dichloroethane	ND	0.020	0.005	ND	0.081	0.020	1
1,1,1-Trichloroethane	ND	0.020	0.006	ND	0.109	0.033	1
Benzene	ND	0.100	0.019	ND	0.319	0.061	1
Carbon tetrachloride	ND	0.020	0.007	ND	0.126	0.044	1
1,2-Dichloropropane	ND	0.020	0.008	ND	0.092	0.037	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800390

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800390-01 Date Collected: 01/05/18 09:00
 Client ID: CAN 347 SHELF 3 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
Bromodichloromethane	ND	0.020	0.008	ND	0.134	0.054	1
1,4-Dioxane	ND	0.100	0.014	ND	0.360	0.051	1
Trichloroethene	ND	0.020	0.007	ND	0.107	0.038	1
cis-1,3-Dichloropropene	ND	0.020	0.006	ND	0.091	0.027	1
4-Methyl-2-pentanone	ND	0.500	0.005	ND	2.05	0.021	1
trans-1,3-Dichloropropene	ND	0.020	0.008	ND	0.091	0.036	1
1,1,2-Trichloroethane	ND	0.020	0.004	ND	0.109	0.022	1
Toluene	ND	0.050	0.006	ND	0.188	0.023	1
Dibromochloromethane	ND	0.020	0.008	ND	0.170	0.068	1
1,2-Dibromoethane	ND	0.020	0.008	ND	0.154	0.062	1
Tetrachloroethene	ND	0.020	0.008	ND	0.136	0.054	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.006	ND	0.137	0.041	1
Chlorobenzene	ND	0.100	0.007	ND	0.461	0.032	1
Ethylbenzene	ND	0.020	0.007	ND	0.087	0.030	1
p/m-Xylene	ND	0.040	0.007	ND	0.174	0.030	1
Bromoform	ND	0.020	0.015	ND	0.207	0.155	1
Styrene	ND	0.020	0.007	ND	0.085	0.030	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.007	ND	0.137	0.048	1
o-Xylene	ND	0.020	0.008	ND	0.087	0.035	1
Isopropylbenzene	ND	0.200	0.007	ND	0.983	0.034	1
4-Ethyltoluene	ND	0.020	0.010	ND	0.098	0.049	1
1,3,5-Trimethylbenzene	ND	0.020	0.005	ND	0.098	0.025	1
1,2,4-Trimethylbenzene	ND	0.020	0.007	ND	0.098	0.034	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
1,4-Dichlorobenzene	ND	0.020	0.008	ND	0.120	0.048	1
sec-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
p-Isopropyltoluene	ND	0.200	0.007	ND	1.10	0.038	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800390

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800390-01 Date Collected: 01/05/18 09:00
 Client ID: CAN 347 SHELF 3 Date Received: 01/05/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air by SIM - Mansfield Lab							
1,2-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
n-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.008	ND	0.262	0.042	1
1,2,3-Trichlorobenzene	ND	0.050	0.019	ND	0.371	0.141	1
Hexachlorobutadiene	ND	0.050	0.007	ND	0.533	0.075	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	88		60-140
bromochloromethane	99		60-140
chlorobenzene-d5	91		60-140

Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800402-01	Date Collected:	01/05/18 16:00
Client ID:	CAN 393 SHELF 7	Date Received:	01/06/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15		
Analytical Date:	01/06/18 18:03		
Analyst:	MB		

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
Chlorodifluoromethane	ND	0.200	0.063	ND	0.707	0.221	1
Propylene	ND	0.500	0.093	ND	0.861	0.160	1
Dichlorodifluoromethane	ND	0.200	0.047	ND	0.989	0.230	1
Chloromethane	ND	0.200	0.096	ND	0.413	0.198	1
Freon-114	ND	0.200	0.042	ND	1.40	0.293	1
Methanol	ND	5.00	0.736	ND	6.55	0.964	1
Vinyl chloride	ND	0.200	0.039	ND	0.511	0.101	1
1,3-Butadiene	ND	0.200	0.080	ND	0.442	0.177	1
Butane	ND	0.200	0.044	ND	0.475	0.105	1
Bromomethane	ND	0.200	0.070	ND	0.777	0.270	1
Chloroethane	ND	0.200	0.077	ND	0.528	0.202	1
Ethanol	ND	5.00	0.542	ND	9.42	1.02	1
Dichlorofluoromethane	ND	0.200	0.057	ND	0.842	0.241	1
Vinyl bromide	ND	0.200	0.070	ND	0.874	0.306	1
Acrolein	ND	0.500	0.114	ND	1.15	0.261	1
Acetone	ND	1.00	0.165	ND	2.38	0.392	1
Acetonitrile	ND	0.200	0.076	ND	0.336	0.128	1
Trichlorofluoromethane	ND	0.200	0.042	ND	1.12	0.234	1
Isopropanol	ND	0.500	0.084	ND	1.23	0.206	1
Acrylonitrile	ND	0.500	0.079	ND	1.09	0.171	1
Pentane	ND	0.200	0.048	ND	0.590	0.140	1
Ethyl ether	ND	0.200	0.059	ND	0.606	0.179	1
1,1-Dichloroethene	ND	0.200	0.057	ND	0.793	0.224	1
Tertiary butyl Alcohol	ND	0.500	0.060	ND	1.52	0.182	1
Methylene chloride	ND	0.500	0.062	ND	1.74	0.216	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
3-Chloropropene	ND	0.200	0.081	ND	0.626	0.254	1
Carbon disulfide	ND	0.200	0.035	ND	0.623	0.107	1
Freon-113	ND	0.200	0.051	ND	1.53	0.392	1
trans-1,2-Dichloroethene	ND	0.200	0.074	ND	0.793	0.293	1
1,1-Dichloroethane	ND	0.200	0.077	ND	0.809	0.312	1
Methyl tert butyl ether	ND	0.200	0.045	ND	0.721	0.163	1
Vinyl acetate	ND	1.00	0.057	ND	3.52	0.200	1
2-Butanone	ND	0.500	0.052	ND	1.47	0.154	1
cis-1,2-Dichloroethene	ND	0.200	0.059	ND	0.793	0.233	1
Ethyl Acetate	ND	0.500	0.131	ND	1.80	0.472	1
Chloroform	ND	0.200	0.045	ND	0.977	0.221	1
Tetrahydrofuran	ND	0.500	0.061	ND	1.47	0.179	1
2,2-Dichloropropane	ND	0.200	0.058	ND	0.924	0.269	1
1,2-Dichloroethane	ND	0.200	0.055	ND	0.809	0.223	1
n-Hexane	ND	0.200	0.052	ND	0.705	0.183	1
Diisopropyl ether	ND	0.200	0.066	ND	0.836	0.274	1
tert-Butyl Ethyl Ether	ND	0.200	0.052	ND	0.836	0.215	1
1,1,1-Trichloroethane	ND	0.200	0.057	ND	1.09	0.311	1
1,1-Dichloropropene	ND	0.200	0.072	ND	0.908	0.325	1
Benzene	ND	0.200	0.054	ND	0.639	0.172	1
Carbon tetrachloride	ND	0.200	0.047	ND	1.26	0.296	1
Cyclohexane	ND	0.200	0.066	ND	0.688	0.226	1
tert-Amyl Methyl Ether	ND	0.200	0.080	ND	0.836	0.332	1
Dibromomethane	ND	0.200	0.048	ND	1.42	0.338	1
1,2-Dichloropropane	ND	0.200	0.070	ND	0.924	0.322	1
Bromodichloromethane	ND	0.200	0.066	ND	1.34	0.439	1
1,4-Dioxane	ND	0.200	0.078	ND	0.721	0.281	1
Trichloroethene	ND	0.200	0.071	ND	1.07	0.382	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
2,2,4-Trimethylpentane	ND	0.200	0.066	ND	0.934	0.308	1
Methyl Methacrylate	ND	0.500	0.147	ND	2.05	0.602	1
Heptane	ND	0.200	0.055	ND	0.820	0.227	1
cis-1,3-Dichloropropene	ND	0.200	0.075	ND	0.908	0.338	1
4-Methyl-2-pentanone	ND	0.500	0.061	ND	2.05	0.249	1
trans-1,3-Dichloropropene	ND	0.200	0.069	ND	0.908	0.315	1
1,1,2-Trichloroethane	ND	0.200	0.067	ND	1.09	0.364	1
Toluene	ND	0.200	0.063	ND	0.754	0.237	1
1,3-Dichloropropane	ND	0.200	0.078	ND	0.924	0.359	1
2-Hexanone	ND	0.200	0.060	ND	0.820	0.248	1
Dibromochloromethane	ND	0.200	0.075	ND	1.70	0.636	1
1,2-Dibromoethane	ND	0.200	0.078	ND	1.54	0.599	1
Butyl acetate	ND	0.500	0.114	ND	2.38	0.542	1
Octane	ND	0.200	0.042	ND	0.934	0.197	1
Tetrachloroethene	ND	0.200	0.076	ND	1.36	0.514	1
1,1,1,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
Chlorobenzene	ND	0.200	0.079	ND	0.921	0.363	1
Ethylbenzene	ND	0.200	0.056	ND	0.869	0.241	1
p/m-Xylene	ND	0.400	0.139	ND	1.74	0.604	1
Bromoform	ND	0.200	0.052	ND	2.07	0.541	1
Styrene	ND	0.200	0.080	ND	0.852	0.340	1
1,1,2,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
o-Xylene	ND	0.200	0.063	ND	0.869	0.274	1
1,2,3-Trichloropropane	ND	0.200	0.077	ND	1.21	0.462	1
Nonane	ND	0.200	0.064	ND	1.05	0.338	1
Isopropylbenzene	ND	0.200	0.043	ND	0.983	0.211	1
Bromobenzene	ND	0.200	0.079	ND	0.793	0.313	1
2-Chlorotoluene	ND	0.200	0.049	ND	1.04	0.252	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
n-Propylbenzene	ND	0.200	0.056	ND	0.983	0.275	1
4-Chlorotoluene	ND	0.200	0.076	ND	1.04	0.396	1
4-Ethyltoluene	ND	0.200	0.078	ND	0.983	0.381	1
1,3,5-Trimethylbenzene	ND	0.200	0.058	ND	0.983	0.287	1
tert-Butylbenzene	ND	0.200	0.040	ND	1.10	0.221	1
1,2,4-Trimethylbenzene	ND	0.200	0.069	ND	0.983	0.341	1
Decane	ND	0.200	0.048	ND	1.16	0.282	1
Benzyl chloride	ND	0.200	0.065	ND	1.04	0.334	1
1,3-Dichlorobenzene	ND	0.200	0.064	ND	1.20	0.383	1
1,4-Dichlorobenzene	ND	0.200	0.042	ND	1.20	0.251	1
sec-Butylbenzene	ND	0.200	0.073	ND	1.10	0.401	1
p-Isopropyltoluene	ND	0.200	0.061	ND	1.10	0.334	1
1,2-Dichlorobenzene	ND	0.200	0.061	ND	1.20	0.369	1
n-Butylbenzene	ND	0.200	0.064	ND	1.10	0.351	1
1,2-Dibromo-3-chloropropane	ND	0.200	0.074	ND	1.93	0.719	1
Undecane	ND	0.200	0.053	ND	1.28	0.338	1
Dodecane	ND	0.200	0.056	ND	1.39	0.393	1
1,2,4-Trichlorobenzene	ND	0.200	0.061	ND	1.48	0.454	1
Naphthalene	ND	0.200	0.043	ND	1.05	0.223	1
1,2,3-Trichlorobenzene	ND	0.200	0.043	ND	1.48	0.320	1
Hexachlorobutadiene	ND	0.200	0.073	ND	2.13	0.781	1

	Results	Qualifier	Units	RDL	Dilution Factor
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Tentatively Identified Compounds

No Tentatively Identified Compounds



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	77		60-140
Bromochloromethane	87		60-140
chlorobenzene-d5	79		60-140



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800402-01	Date Collected:	01/05/18 16:00
Client ID:	CAN 393 SHELF 7	Date Received:	01/06/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15-SIM		
Analytical Date:	01/06/18 18:03		
Analyst:	MB		

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Dichlorodifluoromethane	ND	0.200	0.011	ND	0.989	0.055	1
Chloromethane	ND	0.200	0.048	ND	0.413	0.099	1
Freon-114	ND	0.050	0.012	ND	0.349	0.081	1
Vinyl chloride	ND	0.020	0.006	ND	0.051	0.015	1
1,3-Butadiene	ND	0.020	0.007	ND	0.044	0.016	1
Bromomethane	ND	0.020	0.008	ND	0.078	0.031	1
Chloroethane	ND	0.100	0.017	ND	0.264	0.045	1
Acetone	ND	1.00	0.366	ND	2.38	0.869	1
Trichlorofluoromethane	ND	0.050	0.011	ND	0.281	0.064	1
Acrylonitrile	ND	0.500	0.025	ND	1.09	0.054	1
1,1-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
Freon-113	ND	0.050	0.013	ND	0.383	0.097	1
Halothane	ND	0.050	0.008	ND	0.404	0.065	1
trans-1,2-Dichloroethene	ND	0.020	0.006	ND	0.079	0.024	1
1,1-Dichloroethane	ND	0.020	0.007	ND	0.081	0.028	1
Methyl tert butyl ether	ND	0.200	0.006	ND	0.721	0.022	1
2-Butanone	ND	0.500	0.016	ND	1.47	0.047	1
cis-1,2-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Chloroform	ND	0.020	0.005	ND	0.098	0.024	1
1,2-Dichloroethane	ND	0.020	0.005	ND	0.081	0.020	1
1,1,1-Trichloroethane	ND	0.020	0.006	ND	0.109	0.033	1
Benzene	ND	0.100	0.019	ND	0.319	0.061	1
Carbon tetrachloride	ND	0.020	0.007	ND	0.126	0.044	1
1,2-Dichloropropane	ND	0.020	0.008	ND	0.092	0.037	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air by SIM - Mansfield Lab							
Bromodichloromethane	ND	0.020	0.008	ND	0.134	0.054	1
1,4-Dioxane	ND	0.100	0.014	ND	0.360	0.051	1
Trichloroethene	ND	0.020	0.007	ND	0.107	0.038	1
cis-1,3-Dichloropropene	ND	0.020	0.006	ND	0.091	0.027	1
4-Methyl-2-pentanone	ND	0.500	0.005	ND	2.05	0.021	1
trans-1,3-Dichloropropene	ND	0.020	0.008	ND	0.091	0.036	1
1,1,2-Trichloroethane	ND	0.020	0.004	ND	0.109	0.022	1
Toluene	ND	0.050	0.006	ND	0.188	0.023	1
Dibromochloromethane	ND	0.020	0.008	ND	0.170	0.068	1
1,2-Dibromoethane	ND	0.020	0.008	ND	0.154	0.062	1
Tetrachloroethene	ND	0.020	0.008	ND	0.136	0.054	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.006	ND	0.137	0.041	1
Chlorobenzene	ND	0.100	0.007	ND	0.461	0.032	1
Ethylbenzene	ND	0.020	0.007	ND	0.087	0.030	1
p/m-Xylene	ND	0.040	0.007	ND	0.174	0.030	1
Bromoform	ND	0.020	0.015	ND	0.207	0.155	1
Styrene	ND	0.020	0.007	ND	0.085	0.030	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.007	ND	0.137	0.048	1
o-Xylene	ND	0.020	0.008	ND	0.087	0.035	1
Isopropylbenzene	ND	0.200	0.007	ND	0.983	0.034	1
4-Ethyltoluene	ND	0.020	0.010	ND	0.098	0.049	1
1,3,5-Trimethylbenzene	ND	0.020	0.005	ND	0.098	0.025	1
1,2,4-Trimethylbenzene	ND	0.020	0.007	ND	0.098	0.034	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
1,4-Dichlorobenzene	ND	0.020	0.008	ND	0.120	0.048	1
sec-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
p-Isopropyltoluene	ND	0.200	0.007	ND	1.10	0.038	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air by SIM - Mansfield Lab							
1,2-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
n-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.008	ND	0.262	0.042	1
1,2,3-Trichlorobenzene	ND	0.050	0.019	ND	0.371	0.141	1
Hexachlorobutadiene	ND	0.050	0.007	ND	0.533	0.075	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	80		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	82		60-140

AIR Petro Can Certification

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1800302
Report Date: 02/02/18

AIR CAN CERTIFICATION RESULTS

Lab ID:	L1800302-01	Date Collected:	01/03/18 16:00
Client ID:	CAN 404 SHELF 1	Date Received:	01/05/18
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/05/18 16:35		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1800390
Report Date: 02/02/18

AIR CAN CERTIFICATION RESULTS

Lab ID:	L1800390-01	Date Collected:	01/05/18 09:00
Client ID:	CAN 347 SHELF 3	Date Received:	01/05/18
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/06/18 16:58		
Analyst:	MB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1800402
Report Date: 02/02/18

AIR CAN CERTIFICATION RESULTS

Lab ID:	L1800402-01	Date Collected:	01/05/18 16:00
Client ID:	CAN 393 SHELF 7	Date Received:	01/06/18
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/06/18 18:03		
Analyst:	MB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Serial_No:02021816:31
Lab Number: L1801542
Report Date: 02/02/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
NA	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1801542-01A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801542-02A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801542-03A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801542-04A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801542-05A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801542-06A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801542-07A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801542-08A	Canister - 2.7 Liter	NA	NA			Y	Absent		CLEAN-FEE()

Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

- Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.
- Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.
- Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.
- Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.
- Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A - Spectra identified as "Aldol Condensation Product".
- B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: DU Report with 'J' Qualifiers



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedances are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers



Project Name: CUMMINGS ELLIOTT LANDING
Project Number: CUMMINGS BEVERLY

Lab Number: L1801542
Report Date: 02/02/18

REFERENCES

- 96 Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), MassDEP, December 2009, Revision 1 with QC Requirements & Performance Standards for the Analysis of APH by GC/MS under the Massachusetts Contingency Plan, WSC-CAM-IXA, July 2010.
- 101 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air (EPA/625/R-96/010b:January 1999) with QC Requirements & Performance Standards for the Analysis of TO-15 under the Massachusetts Contingency Plan, WSC-CAM-IXB, July 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO₃-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO₃-F, EPA 353.2: Nitrate-N, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO₄-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT, Enterolert-QT, SM9221E, SM9222D.

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.


CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: *FSL Associates*

Address: *358 Chestnut Hill Ave.*

Phone: *(617) - 292 - 0001*

Fax:

Email: *BHoskins@FSLassociates.com*

These samples have been previously analyzed by Alpha

Date Due:

Time:

AIR ANALYSIS

PAGE 1 OF 1

Date Rec'd in Lab: *1/16/18*

ALPHA Job #: *L1801542*

Project Information

Project Name: *Cummings Elliott Landing*

Project Location: *Beverly, MA*

Project #:

Project Manager: *Bruce Hoskins*

ALPHA Quote #:

Turn-Around Time

Standard

RUSH (only confirmed if pre-approved)

Report Information - Data Deliverables

FAX

ADEx

Criteria Checker:

(Default based on Regulatory Criteria Indicated)

Other Formats:

EMAIL (standard pdf report)

Additional Deliverables:

Report to: (if different than Project Manager)

Billing Information

Same as Client info

PO #:

Regulatory Requirements/Report Limits

State/Fed

Program

Res / Comm

ANALYSIS

TO-15

TO-15 SM

APH

Substrat Non-Volatiles HCs

Fixed Gases

Sulfides & Mercaptans by TO-15

Sample Comments (i.e. PID)

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION				Sample Matrix*	Sampler's Initials	Can Size	ID Can	ID - Flow Controller	TO-15	TO-15 SM	APH	Substrat Non-Volatiles HCs	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
		End Date	Start Time	End Time	Initial Vacuum												
01542 - 01	<i>SG-2</i>	<i>1/15/18</i>	<i>1640</i>	<i>1705</i>	<i>-30.13</i>	<i>-7.61</i>	<i>SV</i>	<i>KJ</i>	<i>2.7373</i>	<i>0263</i>	<i>XX</i>						
02	<i>SG-5</i>	<i>1/15/18</i>	<i>1718</i>	<i>1745</i>	<i>-30.04</i>	<i>-7.68</i>	<i>SV</i>	<i>KJ</i>	<i>2.7395</i>	<i>0257</i>	<i>XX</i>						
03	<i>SG-4</i>	<i>1/15/18</i>	<i>1815</i>	<i>1842</i>	<i>-30.94</i>	<i>-5.43</i>	<i>SV</i>	<i>KJ</i>	<i>2.7462</i>	<i>0830</i>	<i>XX</i>						
04	<i>Duplicate</i>	<i>1/15/18</i>	<i>1815</i>	<i>1842</i>	<i>-29.67</i>	<i>-9.82</i>	<i>SV</i>	<i>KJ</i>	<i>2.7220</i>	<i>0464</i>	<i>XX</i>						
05	<i>SG-1</i>	<i>1/15/18</i>	<i>1635</i>	<i>1655</i>	<i>-31.13</i>	<i>-8.54</i>	<i>SV</i>	<i>KJ</i>	<i>2.7391</i>	<i>0336</i>	<i>XX</i>						
06	<i>SG-3</i>	<i>1/15/18</i>	<i>1730</i>	<i>1758</i>	<i>-26.71</i>	<i>-8.43</i>	<i>SV</i>	<i>CR</i>	<i>2.7333</i>	<i>0045</i>	<i>XX</i>						
07	<i>SG-6</i>	<i>1/15/18</i>	<i>1815</i>	<i>1837</i>	<i>-30.30</i>	<i>-8.52</i>	<i>SV</i>	<i>CR</i>	<i>2.7410</i>	<i>1012</i>	<i>XX</i>						

***SAMPLE MATRIX CODES**

AA = Ambient Air (Indoor/Outdoor)

SV = Soil Vapor/Landfill Gas/SVE

Other = Please Specify

Container Type

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:

PCM Y Jor

Date/Time

1/16/18 12:50 MCFL AIR
1/16/18 1630 CR CAR AIR

Received By:

Date/Time:

1/16/18 1540
1/16/18 1630



ANALYTICAL REPORT

Lab Number:	L1801543
Client:	FSL Associates 358 Chestnut Hill Ave. Brighton, MA 02135
ATTN:	Bruce Hoskins
Phone:	(617) 232-0001
Project Name:	CUMMINGS BEVERLY
Project Number:	CUMMINGS BEVERLY
Report Date:	02/02/18

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Certifications & Approvals: MA (M-MA030), NH NELAP (2062), NJ NELAP (MA015), CT (PH-0141), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LA000299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-13-00067), USFWS (Permit #LE2069641).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1801543-01	S-171X.2	AIR	BEVERLY, MA	01/14/18 10:08	01/16/18
L1801543-02	S-171X.1	AIR	BEVERLY, MA	01/14/18 10:09	01/16/18
L1801543-03	S-171X.3	AIR	BEVERLY, MA	01/14/18 10:10	01/16/18
L1801543-04	DUPLICATE-IA-2	AIR	BEVERLY, MA	01/14/18 10:10	01/16/18
L1801543-05	S-1100.3	AIR	BEVERLY, MA	01/14/18 10:20	01/16/18
L1801543-06	S-1100.2	AIR	BEVERLY, MA	01/14/18 10:23	01/16/18
L1801543-07	S-1100.1	AIR	BEVERLY, MA	01/14/18 10:22	01/16/18
L1801543-08	SV-1	SOIL_VAPOR	BEVERLY, MA	01/14/18 11:58	01/16/18
L1801543-09	SV-11	SOIL_VAPOR	BEVERLY, MA	01/14/18 13:50	01/16/18
L1801543-10	SV-8	SOIL_VAPOR	BEVERLY, MA	01/14/18 15:29	01/16/18
L1801543-11	SV-9	SOIL_VAPOR	BEVERLY, MA	01/14/18 16:15	01/16/18
L1801543-12	SV-5	SOIL_VAPOR	BEVERLY, MA	01/14/18 17:21	01/16/18
L1801543-13	DUPLICATE1	SOIL_VAPOR	BEVERLY, MA	01/14/18 17:21	01/16/18
L1801543-14	SV-2	SOIL_VAPOR	BEVERLY, MA	01/14/18 13:02	01/16/18
L1801543-15	SV-13	SOIL_VAPOR	BEVERLY, MA	01/14/18 14:00	01/16/18
L1801543-16	SV-12	SOIL_VAPOR	BEVERLY, MA	01/14/18 14:42	01/16/18
L1801543-17	SV-10	SOIL_VAPOR	BEVERLY, MA	01/14/18 15:38	01/16/18
L1801543-18	SV-7	SOIL_VAPOR	BEVERLY, MA	01/14/18 16:50	01/16/18
L1801543-19	SV-6	SOIL_VAPOR	BEVERLY, MA	01/14/18 17:16	01/16/18
L1801543-20	SV-4	SOIL_VAPOR	BEVERLY, MA	01/14/18 17:28	01/16/18
L1801543-21	S-149J.1	AIR	BEVERLY, MA	01/14/18 08:38	01/16/18
L1801543-22	S-149J.2	AIR	BEVERLY, MA	01/14/18 08:41	01/16/18
L1801543-23	S-149J.3	AIR	BEVERLY, MA	01/14/18 08:40	01/16/18
PAGE 2 OF 24	S-157J.3	AIR	BEVERLY, MA	01/14/18 08:55	01/16/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Serial_No:02021816:33 Receive Date
L1801543-25	S-157J.1	AIR	BEVERLY, MA	01/14/18 09:00	01/16/18
L1801543-26	S-157J.2	AIR	BEVERLY, MA	01/14/18 08:57	01/16/18
L1801543-27	S-135C.3	AIR	BEVERLY, MA	01/14/18 09:15	01/16/18
L1801543-28	DUPLICATE-IA-1	AIR	BEVERLY, MA	01/14/18 09:15	01/16/18
L1801543-29	S-135C.2	AIR	BEVERLY, MA	01/14/18 09:16	01/16/18
L1801543-30	S-135C.1	AIR	BEVERLY, MA	01/14/18 09:17	01/16/18
L1801543-31	SG-3	SOIL_VAPOR	BEVERLY, MA	01/15/18 20:50	01/16/18
L1801543-32	DUPLICATE2	SOIL_VAPOR	BEVERLY, MA	01/15/18 20:50	01/16/18
L1801543-33	SG-4	SOIL_VAPOR	BEVERLY, MA	01/15/18 20:45	01/16/18

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	YES
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
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Case Narrative (continued)

Report Submission

This report replaces the one previously issued on January 23, 2018. The report has been revised to report additional compounds at the request of the client. Unfortunately 4-Ethyltoluene could not be reported.

MCP Related Narratives

Canisters were released from the laboratory on January 11, 2018. The canister certification data is provided as an addendum.

MCP Volatile Organics in Air

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

L1801543-14 The presence of Acetone could not be determined in this sample due to a non-target compound interfering with the identification and quantification of this compound.

L1801543-33 The presence of Acetone could not be determined in this sample due to a non-target compound interfering with the identification and quantification of this compound.

L1801543-14: The results should be considered estimated, and are qualified with an E flag, for any compound that exceeded the calibration range in the initial analysis.

L1801543-27: The results should be considered estimated, and are qualified with an E flag, for any compound that exceeded the calibration range in the initial analysis.

L1801543-28: The results should be considered estimated, and are qualified with an E flag, for any compound that exceeded the calibration range in the initial analysis.

Project Name: CUMMINGS BEVERLY
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Lab Number: L1801543
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Case Narrative (continued)

L1801543-29: The results should be considered estimated, and are qualified with an E flag, for any compound that exceeded the calibration range in the initial analysis.

L1801543-30: The results should be considered estimated, and are qualified with an E flag, for any compound that exceeded the calibration range in the initial analysis.

Petroleum Hydrocarbons in Air

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

All significant concentrations of non-petroleum VOCs detected in the TO-15 analysis were subtracted from the corresponding hydrocarbon ranges.

L1801543-01 through -07 and -21 through -30: All significant concentrations of non-petroleum VOCs detected in the TO-15 analysis were subtracted from the corresponding hydrocarbon ranges.

Sample Receipt

The sample designated S-171X.1 (L1801543-02) had a RPD for the pre- and post-flow controller calibration check (24% RPD) that was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 3.3 mL/minute; the final flow rate was 2.6 mL/minute. The final pressure recorded by the laboratory of the associated canister was -12.2 inches of mercury. No further action was required.

The sample designated SV-1 (L1801543-08) had a RPD for the pre- and post-flow controller calibration check (22% RPD) that was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 70 mL/minute; the final flow rate was 87 mL/minute. The final pressure recorded by the laboratory of the associated canister was -11.1 inches of mercury. No further action was required.

The sample designated SV-7 (L1801543-18) had a RPD for the pre- and post-flow controller calibration

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Case Narrative (continued)

check (31% RPD) that was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 71 mL/minute; the final flow rate was 97 mL/minute. The final pressure recorded by the laboratory of the associated canister was -5.3 inches of mercury. No further action was required.

The sample designated S-149J.2 (L1801543-22) had a RPD for the pre- and post-flow controller calibration check (107% RPD) that was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 3.3 mL/minute; the final flow rate was 10.9 mL/minute. The final pressure recorded by the laboratory of the associated canister was -6.6 inches of mercury. No further action was required.

The sample designated S-149J.3 (L1801543-23) had a RPD for the pre- and post-flow controller calibration check (43% RPD) that was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 3.1 mL/minute; the final flow rate was 4.8 mL/minute. The final pressure recorded by the laboratory of the associated canister was 4.0 inches of mercury. No further action was required.

The sample designated S-157J.1 (L1801543-25) had a RPD for the pre- and post-flow controller calibration check (59% RPD) that was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 3.3 mL/minute; the final flow rate was 1.8 mL/minute. The final pressure recorded by the laboratory of the associated canister was -12.3 inches of mercury. No further action was required.

The sample designated S-157J.2 (L1801543-26) had a RPD for the pre- and post-flow controller calibration check (22% RPD) that was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 3.2 mL/minute; the final flow rate was 4.0 mL/minute. The final pressure recorded by the laboratory of the associated canister was -5.6 inches of mercury. No further action was required.

The sample designated S-135C.2 (L1801543-29) had a RPD for the pre- and post-flow controller calibration check (75% RPD) that was outside of the control limit (20% RPD). The initial flow rate for the flow controller was 3.3 mL/minute; the final flow rate was 7.3 mL/minute. The final pressure recorded by the laboratory of the associated canister was 4inches of mercury. No further action was required.

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Case Narrative (continued)

QC SAMPLES

MCP-TO15-SIM The WG1082320-3 LCS recoveries were below the acceptance criteria for propylene (66%) and dichlorodifluoromethane (66%); however, all results are considered to have a potentially low bias for these compounds.

MCP-TO15-SIM The WG1082531-3 LCS recoveries were below the acceptance criteria for propylene (68%); however, all results are considered to have a potentially low bias for this analyte.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Christopher J. Anderson Christopher J. Anderson

Title: Technical Director/Representative

Date: 02/02/18

AIR



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-01	Date Collected:	01/14/18 10:08
Client ID:	S-171X.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 16:35		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.079	0.500	0.034	0.136	0.861	0.059	J	1
Dichlorodifluoromethane	0.319	0.200	0.100	1.58	0.989	0.494		1
Chloromethane	0.469	0.200	0.100	0.968	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	0.010	0.020	0.010	0.039	0.078	0.039	J	1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	23.0	5.00	0.157	43.3	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	3.15	1.00	0.500	7.48	2.38	1.19		1
Trichlorofluoromethane	0.203	0.050	0.025	1.14	0.281	0.140		1
Isopropanol	6.96	0.500	0.153	17.1	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.061	0.050	0.025	0.468	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
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SAMPLE RESULTS

Lab ID:	L1801543-01	Date Collected:	01/14/18 10:08
Client ID:	S-171X.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.036	0.500	0.020	0.130	1.80	0.072	J	1
Chloroform	0.046	0.020	0.010	0.225	0.098	0.049		1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109		1
1,2-Dichloroethane	0.016	0.020	0.010	0.065	0.081	0.041	J	1
n-Hexane	0.039	0.200	0.033	0.137	0.705	0.116	J	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Benzene	0.100	0.100	0.050	0.319	0.319	0.160		1
Carbon tetrachloride	0.075	0.020	0.010	0.472	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.032	0.200	0.032	0.131	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.083	0.050	0.025	0.313	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	ND	0.020	0.010	ND	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.011	0.020	0.010	0.048	0.087	0.043	J	1
p/m-Xylene	0.022	0.040	0.020	0.096	0.174	0.087	J	1



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SAMPLE RESULTS

Lab ID:	L1801543-01	Date Collected:	01/14/18 10:08
Client ID:	S-171X.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.021	0.020	0.010	0.089	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.011	0.020	0.010	0.048	0.087	0.043	J 1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
1,2,4-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	0.014	0.050	0.010	0.104	0.371	0.074	J 1
Naphthalene	0.026	0.050	0.025	0.136	0.262	0.131	J 1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	88		60-140
bromochloromethane	93		60-140
chlorobenzene-d5	88		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-02	Date Collected:	01/14/18 10:09
Client ID:	S-171X.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 17:59		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.106	0.500	0.034	0.182	0.861	0.059	J	1
Dichlorodifluoromethane	0.280	0.200	0.100	1.38	0.989	0.494		1
Chloromethane	0.474	0.200	0.100	0.979	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.010	0.020	0.010	0.022	0.044	0.022	J	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	69.8	5.00	0.157	132	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	6.40	1.00	0.500	15.2	2.38	1.19		1
Trichlorofluoromethane	0.207	0.050	0.025	1.16	0.281	0.140		1
Isopropanol	6.54	0.500	0.153	16.1	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	0.605	0.500	0.250	2.10	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.071	0.050	0.025	0.544	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	2.06	0.500	0.250	6.08	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
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SAMPLE RESULTS

Lab ID:	L1801543-02	Date Collected:	01/14/18 10:09
Client ID:	S-171X.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.065	0.500	0.020	0.234	1.80	0.072	J	1
Chloroform	0.076	0.020	0.010	0.371	0.098	0.049		1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109		1
1,2-Dichloroethane	0.016	0.020	0.010	0.065	0.081	0.041	J	1
n-Hexane	0.114	0.200	0.033	0.402	0.705	0.116	J	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Benzene	0.118	0.100	0.050	0.377	0.319	0.160		1
Carbon tetrachloride	0.075	0.020	0.010	0.472	0.126	0.063		1
Cyclohexane	0.117	0.200	0.030	0.403	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	0.020	0.020	0.010	0.134	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.052	0.200	0.032	0.213	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	0.313	0.500	0.250	1.28	2.05	1.02	J	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.363	0.050	0.025	1.37	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.061	0.020	0.010	0.414	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.020	0.020	0.010	0.087	0.087	0.043		1
p/m-Xylene	0.043	0.040	0.020	0.187	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-02	Date Collected:	01/14/18 10:09
Client ID:	S-171X.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.120	0.020	0.010	0.511	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.020	0.020	0.010	0.087	0.087	0.043	1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
1,2,4-Trimethylbenzene	0.018	0.020	0.010	0.089	0.098	0.049	J 1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	0.015	0.050	0.010	0.111	0.371	0.074	J 1
Naphthalene	0.032	0.050	0.025	0.168	0.262	0.131	J 1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	89		60-140
bromochloromethane	95		60-140
chlorobenzene-d5	89		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-03	Date Collected:	01/14/18 10:10
Client ID:	S-171X.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 18:34		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.074	0.500	0.034	0.127	0.861	0.059	J	1
Dichlorodifluoromethane	0.360	0.200	0.100	1.78	0.989	0.494		1
Chloromethane	0.490	0.200	0.100	1.01	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	16.9	5.00	0.157	31.8	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	3.03	1.00	0.500	7.20	2.38	1.19		1
Trichlorofluoromethane	0.215	0.050	0.025	1.21	0.281	0.140		1
Isopropanol	2.51	0.500	0.153	6.17	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	1.37	0.500	0.250	4.76	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.067	0.050	0.025	0.514	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-03	Date Collected:	01/14/18 10:10
Client ID:	S-171X.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.037	0.500	0.020	0.133	1.80	0.072	J	1
Chloroform	0.042	0.020	0.010	0.205	0.098	0.049		1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109		1
1,2-Dichloroethane	0.016	0.020	0.010	0.065	0.081	0.041	J	1
n-Hexane	0.060	0.200	0.033	0.211	0.705	0.116	J	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Benzene	0.110	0.100	0.050	0.351	0.319	0.160		1
Carbon tetrachloride	0.080	0.020	0.010	0.503	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.105	0.050	0.025	0.396	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	ND	0.020	0.010	ND	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.013	0.020	0.010	0.057	0.087	0.043	J	1
p/m-Xylene	0.027	0.040	0.020	0.117	0.174	0.087	J	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-03	Date Collected:	01/14/18 10:10
Client ID:	S-171X.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Bromoform	ND	0.020	0.010	ND	0.207	0.103		1
Styrene	0.025	0.020	0.010	0.106	0.085	0.043		1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069		1
o-Xylene	0.010	0.020	0.010	0.043	0.087	0.043	J	1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049		1
1,2,4-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049		1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192		1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060		1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060		1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060		1
1,2,4-Trichlorobenzene	0.010	0.050	0.010	0.074	0.371	0.074	J	1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131		1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	83		60-140
bromochloromethane	91		60-140
chlorobenzene-d5	82		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-04	Date Collected:	01/14/18 10:10
Client ID:	DUPLICATE-IA-2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 19:43		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.073	0.500	0.034	0.126	0.861	0.059	J	1
Dichlorodifluoromethane	0.450	0.200	0.100	2.23	0.989	0.494		1
Chloromethane	0.486	0.200	0.100	1.00	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	16.8	5.00	0.157	31.7	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	2.81	1.00	0.500	6.68	2.38	1.19		1
Trichlorofluoromethane	0.213	0.050	0.025	1.20	0.281	0.140		1
Isopropanol	2.82	0.500	0.153	6.93	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.069	0.050	0.025	0.529	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-04	Date Collected:	01/14/18 10:10
Client ID:	DUPLICATE-IA-2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.032	0.500	0.020	0.115	1.80	0.072	J	1
Chloroform	0.044	0.020	0.010	0.215	0.098	0.049		1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109		1
1,2-Dichloroethane	0.016	0.020	0.010	0.065	0.081	0.041	J	1
n-Hexane	0.038	0.200	0.033	0.134	0.705	0.116	J	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Benzene	0.102	0.100	0.050	0.326	0.319	0.160		1
Carbon tetrachloride	0.079	0.020	0.010	0.497	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.078	0.050	0.025	0.294	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	ND	0.020	0.010	ND	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	ND	0.020	0.010	ND	0.087	0.043		1
p/m-Xylene	ND	0.040	0.020	ND	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-04	Date Collected:	01/14/18 10:10
Client ID:	DUPLICATE-IA-2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Bromoform	ND	0.020	0.010	ND	0.207	0.103		1
Styrene	0.018	0.020	0.010	0.077	0.085	0.043	J	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069		1
o-Xylene	ND	0.020	0.010	ND	0.087	0.043		1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049		1
1,2,4-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049		1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192		1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060		1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060		1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060		1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074		1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131		1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	82		60-140
bromochloromethane	89		60-140
chlorobenzene-d5	82		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-05	Date Collected:	01/14/18 10:20
Client ID:	S-1100.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 20:18		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.086	0.500	0.034	0.148	0.861	0.059	J	1
Dichlorodifluoromethane	0.315	0.200	0.100	1.56	0.989	0.494		1
Chloromethane	0.453	0.200	0.100	0.935	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	216	5.00	0.157	407	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	18.6	1.00	0.500	44.2	2.38	1.19		1
Trichlorofluoromethane	0.227	0.050	0.025	1.28	0.281	0.140		1
Isopropanol	45.0	0.500	0.153	111	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	0.329	0.500	0.250	1.14	1.74	0.869	J	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.095	0.050	0.025	0.728	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	34.1	0.500	0.250	101	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-05	Date Collected:	01/14/18 10:20
Client ID:	S-1100.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Ethyl Acetate	1.91	0.500	0.020	6.88	1.80	0.072	1
Chloroform	0.033	0.020	0.010	0.161	0.098	0.049	1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109	1
1,2-Dichloroethane	0.090	0.020	0.010	0.364	0.081	0.041	1
n-Hexane	0.081	0.200	0.033	0.285	0.705	0.116	J 1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Benzene	0.128	0.100	0.050	0.409	0.319	0.160	1
Carbon tetrachloride	0.081	0.020	0.010	0.510	0.126	0.063	1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046	1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180	1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126	1
Heptane	0.110	0.200	0.032	0.451	0.820	0.131	J 1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Toluene	9.13	0.050	0.025	34.4	0.188	0.094	1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085	1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077	1
Tetrachloroethene	0.011	0.020	0.010	0.075	0.136	0.068	J 1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046	1
Ethylbenzene	0.043	0.020	0.010	0.187	0.087	0.043	1
p/m-Xylene	0.123	0.040	0.020	0.534	0.174	0.087	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-05	Date Collected:	01/14/18 10:20
Client ID:	S-1100.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.061	0.020	0.010	0.260	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.056	0.020	0.010	0.243	0.087	0.043	1
1,3,5-Trimethylbenzene	0.011	0.020	0.010	0.054	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.038	0.020	0.010	0.187	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.045	0.050	0.025	0.236	0.262	0.131	J 1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	81		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	83		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-06	Date Collected:	01/14/18 10:23
Client ID:	S-1100.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 20:52		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.156	0.500	0.034	0.268	0.861	0.059	J	1
Dichlorodifluoromethane	0.331	0.200	0.100	1.64	0.989	0.494		1
Chloromethane	0.525	0.200	0.100	1.08	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.012	0.020	0.010	0.027	0.044	0.022	J	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	120	5.00	0.157	226	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	23.5	1.00	0.500	55.8	2.38	1.19		1
Trichlorofluoromethane	0.221	0.050	0.025	1.24	0.281	0.140		1
Isopropanol	33.1	0.500	0.153	81.4	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	0.364	0.500	0.250	1.26	1.74	0.869	J	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.070	0.050	0.025	0.537	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	11.8	0.500	0.250	34.8	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID: L1801543-06 Date Collected: 01/14/18 10:23
Client ID: S-1100.2 Date Received: 01/16/18
Sample Location: BEVERLY, MA Field Prep: Not Specified
Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.153	0.500	0.020	0.551	1.80	0.072	J	1
Chloroform	0.033	0.020	0.010	0.161	0.098	0.049		1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109		1
1,2-Dichloroethane	0.068	0.020	0.010	0.275	0.081	0.041		1
n-Hexane	0.129	0.200	0.033	0.455	0.705	0.116	J	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Benzene	0.128	0.100	0.050	0.409	0.319	0.160		1
Carbon tetrachloride	0.082	0.020	0.010	0.516	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.118	0.200	0.032	0.484	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	5.40	0.050	0.025	20.3	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.016	0.020	0.010	0.108	0.136	0.068	J	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.038	0.020	0.010	0.165	0.087	0.043		1
p/m-Xylene	0.104	0.040	0.020	0.452	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-06	Date Collected:	01/14/18 10:23
Client ID:	S-1100.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.066	0.020	0.010	0.281	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.044	0.020	0.010	0.191	0.087	0.043	1
1,3,5-Trimethylbenzene	0.013	0.020	0.010	0.064	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.040	0.020	0.010	0.197	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.028	0.050	0.025	0.147	0.262	0.131	J 1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	81		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	82		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-07	Date Collected:	01/14/18 10:22
Client ID:	S-1100.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 21:27		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.134	0.500	0.034	0.231	0.861	0.059	J	1
Dichlorodifluoromethane	0.498	0.200	0.100	2.46	0.989	0.494		1
Chloromethane	0.454	0.200	0.100	0.938	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.011	0.020	0.010	0.024	0.044	0.022	J	1
Bromomethane	0.012	0.020	0.010	0.047	0.078	0.039	J	1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	134	5.00	0.157	252	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	25.0	1.00	0.500	59.4	2.38	1.19		1
Trichlorofluoromethane	0.231	0.050	0.025	1.30	0.281	0.140		1
Isopropanol	39.4	0.500	0.153	96.8	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.096	0.050	0.025	0.736	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	16.0	0.500	0.250	47.2	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-07	Date Collected:	01/14/18 10:22
Client ID:	S-1100.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.169	0.500	0.020	0.609	1.80	0.072	J	1
Chloroform	0.033	0.020	0.010	0.161	0.098	0.049		1
Tetrahydrofuran	0.140	0.200	0.037	0.413	0.590	0.109	J	1
1,2-Dichloroethane	0.071	0.020	0.010	0.287	0.081	0.041		1
n-Hexane	0.113	0.200	0.033	0.398	0.705	0.116	J	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Benzene	0.103	0.100	0.050	0.329	0.319	0.160		1
Carbon tetrachloride	0.079	0.020	0.010	0.497	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.122	0.200	0.032	0.500	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	6.47	0.050	0.025	24.4	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.011	0.020	0.010	0.075	0.136	0.068	J	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.035	0.020	0.010	0.152	0.087	0.043		1
p/m-Xylene	0.096	0.040	0.020	0.417	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-07	Date Collected:	01/14/18 10:22
Client ID:	S-1100.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.076	0.020	0.010	0.324	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.040	0.020	0.010	0.174	0.087	0.043	1
1,3,5-Trimethylbenzene	0.013	0.020	0.010	0.064	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.035	0.020	0.010	0.172	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	84		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	85		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-08	Date Collected:	01/14/18 11:58
Client ID:	SV-1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 21:14		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	ND	0.500	0.034	ND	0.861	0.059		1
Dichlorodifluoromethane	0.523	0.200	0.100	2.59	0.989	0.494		1
Chloromethane	ND	0.200	0.100	ND	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.022	0.020	0.010	0.058	0.053	0.026		1
Ethanol	2.67	5.00	0.157	5.03	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	2.74	1.00	0.500	6.51	2.38	1.19		1
Trichlorofluoromethane	0.466	0.050	0.025	2.62	0.281	0.140		1
Isopropanol	1.36	0.500	0.153	3.34	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	0.329	0.500	0.250	1.14	1.74	0.869	J	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.168	0.200	0.063	0.523	0.623	0.196	J	1
Freon-113	0.090	0.050	0.025	0.690	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.187	0.020	0.010	0.757	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.777	0.500	0.250	2.29	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-08	Date Collected:	01/14/18 11:58
Client ID:	SV-1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.027	0.500	0.020	0.097	1.80	0.072	J	1
Chloroform	1.97	0.020	0.010	9.62	0.098	0.049		1
Tetrahydrofuran	0.056	0.200	0.037	0.165	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	1.90	0.020	0.010	10.4	0.109	0.055		1
Benzene	0.178	0.100	0.050	0.569	0.319	0.160		1
Carbon tetrachloride	0.093	0.020	0.010	0.585	0.126	0.063		1
Cyclohexane	0.066	0.200	0.030	0.227	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.169	0.020	0.010	0.908	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.295	0.050	0.025	1.11	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	1.30	0.020	0.010	8.82	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.042	0.020	0.010	0.182	0.087	0.043		1
p/m-Xylene	0.144	0.040	0.020	0.625	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-08	Date Collected:	01/14/18 11:58
Client ID:	SV-1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.422	0.020	0.010	1.80	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.054	0.020	0.010	0.235	0.087	0.043	1
1,3,5-Trimethylbenzene	0.016	0.020	0.010	0.079	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.083	0.020	0.010	0.408	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.243	0.050	0.025	1.27	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	61		60-140
bromochloromethane	78		60-140
chlorobenzene-d5	76		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-09	Date Collected:	01/14/18 13:50
Client ID:	SV-11	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 21:47		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	ND	0.500	0.034	ND	0.861	0.059		1
Dichlorodifluoromethane	0.286	0.200	0.100	1.41	0.989	0.494		1
Chloromethane	0.110	0.200	0.100	0.227	0.413	0.207	J	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	12.8	5.00	0.157	24.1	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	4.54	1.00	0.500	10.8	2.38	1.19		1
Trichlorofluoromethane	0.289	0.050	0.025	1.62	0.281	0.140		1
Isopropanol	2.44	0.500	0.153	6.00	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.077	0.200	0.063	0.240	0.623	0.196	J	1
Freon-113	0.083	0.050	0.025	0.636	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	1.45	0.500	0.250	4.28	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-09	Date Collected:	01/14/18 13:50
Client ID:	SV-11	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.061	0.500	0.020	0.220	1.80	0.072	J	1
Chloroform	0.036	0.020	0.010	0.176	0.098	0.049		1
Tetrahydrofuran	0.175	0.200	0.037	0.516	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	1.51	0.020	0.010	8.24	0.109	0.055		1
Benzene	0.087	0.100	0.050	0.278	0.319	0.160	J	1
Carbon tetrachloride	0.065	0.020	0.010	0.409	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.045	0.020	0.010	0.242	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.317	0.050	0.025	1.19	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.169	0.020	0.010	1.15	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.043	0.020	0.010	0.187	0.087	0.043		1
p/m-Xylene	0.135	0.040	0.020	0.586	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-09	Date Collected:	01/14/18 13:50
Client ID:	SV-11	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.379	0.020	0.010	1.61	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.052	0.020	0.010	0.226	0.087	0.043	1
1,3,5-Trimethylbenzene	0.015	0.020	0.010	0.074	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.074	0.020	0.010	0.364	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	0.010	0.020	0.010	0.060	0.120	0.060	J 1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.129	0.050	0.025	0.676	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	74		60-140
bromochloromethane	84		60-140
chlorobenzene-d5	80		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-10	Date Collected:	01/14/18 15:29
Client ID:	SV-8	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 22:19		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	ND	0.500	0.034	ND	0.861	0.059		1
Dichlorodifluoromethane	0.312	0.200	0.100	1.54	0.989	0.494		1
Chloromethane	0.131	0.200	0.100	0.271	0.413	0.207	J	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	3.12	5.00	0.157	5.88	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	3.11	1.00	0.500	7.39	2.38	1.19		1
Trichlorofluoromethane	0.267	0.050	0.025	1.50	0.281	0.140		1
Isopropanol	2.44	0.500	0.153	6.00	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	3.89	0.500	0.250	13.5	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.082	0.200	0.063	0.255	0.623	0.196	J	1
Freon-113	0.080	0.050	0.025	0.613	0.383	0.192		1
trans-1,2-Dichloroethene	0.033	0.020	0.010	0.131	0.079	0.040		1
1,1-Dichloroethane	0.103	0.020	0.010	0.417	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.585	0.500	0.250	1.73	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-10	Date Collected:	01/14/18 15:29
Client ID:	SV-8	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.045	0.500	0.020	0.162	1.80	0.072	J	1
Chloroform	0.253	0.020	0.010	1.24	0.098	0.049		1
Tetrahydrofuran	0.089	0.200	0.037	0.262	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	1.68	0.020	0.010	9.17	0.109	0.055		1
Benzene	ND	0.100	0.050	ND	0.319	0.160		1
Carbon tetrachloride	0.036	0.020	0.010	0.226	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	1.05	0.020	0.010	5.64	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.196	0.050	0.025	0.739	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.086	0.020	0.010	0.583	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.038	0.020	0.010	0.165	0.087	0.043		1
p/m-Xylene	0.135	0.040	0.020	0.586	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-10	Date Collected:	01/14/18 15:29
Client ID:	SV-8	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.349	0.020	0.010	1.49	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.051	0.020	0.010	0.222	0.087	0.043	1
1,3,5-Trimethylbenzene	0.016	0.020	0.010	0.079	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.085	0.020	0.010	0.418	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.144	0.050	0.025	0.755	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	77		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	76		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-11	Date Collected:	01/14/18 16:15
Client ID:	SV-9	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 22:52		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.233	0.500	0.034	0.401	0.861	0.059	J	1
Dichlorodifluoromethane	0.575	0.200	0.100	2.84	0.989	0.494		1
Chloromethane	0.469	0.200	0.100	0.968	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	0.026	0.020	0.010	0.101	0.078	0.039		1
Chloroethane	0.039	0.020	0.010	0.103	0.053	0.026		1
Ethanol	10.8	5.00	0.157	20.3	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	11.3	1.00	0.500	26.8	2.38	1.19		1
Trichlorofluoromethane	0.294	0.050	0.025	1.65	0.281	0.140		1
Isopropanol	6.88	0.500	0.153	16.9	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.126	0.200	0.063	0.392	0.623	0.196	J	1
Freon-113	0.090	0.050	0.025	0.690	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.055	0.020	0.010	0.223	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.949	0.500	0.250	2.80	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-11	Date Collected:	01/14/18 16:15
Client ID:	SV-9	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072	1
Chloroform	0.185	0.020	0.010	0.903	0.098	0.049	1
Tetrahydrofuran	0.141	0.200	0.037	0.416	0.590	0.109	J 1
1,2-Dichloroethane	0.022	0.020	0.010	0.089	0.081	0.041	1
n-Hexane	0.071	0.200	0.033	0.250	0.705	0.116	J 1
1,1,1-Trichloroethane	0.148	0.020	0.010	0.807	0.109	0.055	1
Benzene	0.150	0.100	0.050	0.479	0.319	0.160	1
Carbon tetrachloride	0.127	0.020	0.010	0.799	0.126	0.063	1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046	1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180	1
Trichloroethene	0.048	0.020	0.010	0.258	0.107	0.054	1
2,2,4-Trimethylpentane	0.036	0.200	0.027	0.168	0.934	0.126	J 1
Heptane	0.066	0.200	0.032	0.270	0.820	0.131	J 1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Toluene	0.329	0.050	0.025	1.24	0.188	0.094	1
2-Hexanone	0.106	0.200	0.030	0.434	0.820	0.123	J 1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085	1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077	1
Tetrachloroethene	0.039	0.020	0.010	0.264	0.136	0.068	1
Chlorobenzene	0.040	0.100	0.010	0.184	0.461	0.046	J 1
Ethylbenzene	0.053	0.020	0.010	0.230	0.087	0.043	1
p/m-Xylene	0.170	0.040	0.020	0.738	0.174	0.087	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-11	Date Collected:	01/14/18 16:15
Client ID:	SV-9	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.417	0.020	0.010	1.78	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.071	0.020	0.010	0.308	0.087	0.043	1
1,3,5-Trimethylbenzene	0.021	0.020	0.010	0.103	0.098	0.049	1
1,2,4-Trimethylbenzene	0.092	0.020	0.010	0.452	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.071	0.050	0.025	0.372	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	75		60-140
bromochloromethane	82		60-140
chlorobenzene-d5	83		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID: L1801543-12 Date Collected: 01/14/18 17:21
Client ID: SV-5 Date Received: 01/16/18
Sample Location: BEVERLY, MA Field Prep: Not Specified
Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 101,TO15-SIM
Analytical Date: 01/19/18 23:24
Analyst: MB

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	ND	0.500	0.034	ND	0.861	0.059		1
Dichlorodifluoromethane	0.537	0.200	0.100	2.66	0.989	0.494		1
Chloromethane	0.173	0.200	0.100	0.357	0.413	0.207	J	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.024	0.020	0.010	0.063	0.053	0.026		1
Ethanol	10.2	5.00	0.157	19.2	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	4.00	1.00	0.500	9.50	2.38	1.19		1
Trichlorofluoromethane	0.311	0.050	0.025	1.75	0.281	0.140		1
Isopropanol	3.18	0.500	0.153	7.82	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.065	0.200	0.063	0.202	0.623	0.196	J	1
Freon-113	0.090	0.050	0.025	0.690	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.026	0.020	0.010	0.105	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.805	0.500	0.250	2.37	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-12	Date Collected:	01/14/18 17:21
Client ID:	SV-5	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.056	0.500	0.020	0.202	1.80	0.072	J	1
Chloroform	0.029	0.020	0.010	0.142	0.098	0.049		1
Tetrahydrofuran	0.054	0.200	0.037	0.159	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	0.082	0.020	0.010	0.447	0.109	0.055		1
Benzene	0.062	0.100	0.050	0.198	0.319	0.160	J	1
Carbon tetrachloride	0.083	0.020	0.010	0.522	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.019	0.020	0.010	0.102	0.107	0.054	J	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.190	0.050	0.025	0.716	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.086	0.020	0.010	0.583	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.027	0.020	0.010	0.117	0.087	0.043		1
p/m-Xylene	0.084	0.040	0.020	0.365	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-12	Date Collected:	01/14/18 17:21
Client ID:	SV-5	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.231	0.020	0.010	0.984	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.033	0.020	0.010	0.143	0.087	0.043	1
1,3,5-Trimethylbenzene	0.015	0.020	0.010	0.074	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.061	0.020	0.010	0.300	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.154	0.050	0.025	0.807	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	70		60-140
bromochloromethane	82		60-140
chlorobenzene-d5	82		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-13	Date Collected:	01/14/18 17:21
Client ID:	DUPLICATE1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 23:57		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	ND	0.500	0.034	ND	0.861	0.059		1
Dichlorodifluoromethane	0.408	0.200	0.100	2.02	0.989	0.494		1
Chloromethane	ND	0.200	0.100	ND	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.017	0.020	0.010	0.045	0.053	0.026	J	1
Ethanol	4.36	5.00	0.157	8.22	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	3.16	1.00	0.500	7.51	2.38	1.19		1
Trichlorofluoromethane	0.304	0.050	0.025	1.71	0.281	0.140		1
Isopropanol	1.97	0.500	0.153	4.84	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.081	0.050	0.025	0.621	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.027	0.020	0.010	0.109	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.550	0.500	0.250	1.62	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID: L1801543-13 Date Collected: 01/14/18 17:21
Client ID: DUPLICATE1 Date Received: 01/16/18
Sample Location: BEVERLY, MA Field Prep: Not Specified
Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.023	0.500	0.020	0.083	1.80	0.072	J	1
Chloroform	0.167	0.020	0.010	0.816	0.098	0.049		1
Tetrahydrofuran	0.112	0.200	0.037	0.330	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	0.085	0.020	0.010	0.464	0.109	0.055		1
Benzene	ND	0.100	0.050	ND	0.319	0.160		1
Carbon tetrachloride	0.076	0.020	0.010	0.478	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.024	0.020	0.010	0.129	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.146	0.050	0.025	0.550	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.125	0.020	0.010	0.848	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.025	0.020	0.010	0.109	0.087	0.043		1
p/m-Xylene	0.088	0.040	0.020	0.382	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-13	Date Collected:	01/14/18 17:21
Client ID:	DUPLICATE1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.232	0.020	0.010	0.988	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.034	0.020	0.010	0.148	0.087	0.043	1
1,3,5-Trimethylbenzene	0.016	0.020	0.010	0.079	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.066	0.020	0.010	0.324	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	0.011	0.050	0.010	0.082	0.371	0.074	J 1
Naphthalene	0.127	0.050	0.025	0.666	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	74		60-140
bromochloromethane	83		60-140
chlorobenzene-d5	79		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-14	Date Collected:	01/14/18 13:02
Client ID:	SV-2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 00:29		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	99.0	0.500	0.034	170	0.861	0.059	E	1
Dichlorodifluoromethane	0.107	0.200	0.100	0.529	0.989	0.494	J	1
Chloromethane	ND	0.200	0.100	ND	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	0.135	0.020	0.010	0.345	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.075	0.020	0.010	0.198	0.053	0.026		1
Ethanol	3.39	5.00	0.157	6.39	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	ND	1.00	0.500	ND	2.38	1.19		1
Trichlorofluoromethane	0.107	0.050	0.025	0.601	0.281	0.140		1
Isopropanol	3.43	0.500	0.153	8.43	1.23	0.376		1
1,1-Dichloroethene	0.032	0.020	0.010	0.127	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	5.15	0.200	0.063	16.0	0.623	0.196		1
Freon-113	0.035	0.050	0.025	0.268	0.383	0.192	J	1
trans-1,2-Dichloroethene	0.062	0.020	0.010	0.246	0.079	0.040		1
1,1-Dichloroethane	2.26	0.020	0.010	9.15	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	2.58	0.500	0.250	7.61	1.47	0.737		1
cis-1,2-Dichloroethene	0.317	0.020	0.010	1.26	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-14	Date Collected:	01/14/18 13:02
Client ID:	SV-2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.072	0.500	0.020	0.259	1.80	0.072	J	1
Chloroform	0.070	0.020	0.010	0.342	0.098	0.049		1
Tetrahydrofuran	0.160	0.200	0.037	0.472	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	10.9	0.200	0.033	38.4	0.705	0.116		1
1,1,1-Trichloroethane	0.057	0.020	0.010	0.311	0.109	0.055		1
Benzene	2.95	0.100	0.050	9.42	0.319	0.160		1
Carbon tetrachloride	0.019	0.020	0.010	0.120	0.126	0.063	J	1
Cyclohexane	7.88	0.200	0.030	27.1	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.205	0.020	0.010	1.10	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	3.10	0.200	0.032	12.7	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.799	0.050	0.025	3.01	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.300	0.020	0.010	2.03	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.226	0.020	0.010	0.982	0.087	0.043		1
p/m-Xylene	0.449	0.040	0.020	1.95	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-14	Date Collected:	01/14/18 13:02
Client ID:	SV-2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.528	0.020	0.010	2.25	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.290	0.020	0.010	1.26	0.087	0.043	1
1,3,5-Trimethylbenzene	0.068	0.020	0.010	0.334	0.098	0.049	1
1,2,4-Trimethylbenzene	0.131	0.020	0.010	0.644	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	0.015	0.020	0.010	0.090	0.120	0.060	J 1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.070	0.050	0.025	0.367	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	86		60-140
bromochloromethane	86		60-140
chlorobenzene-d5	93		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-15	Date Collected:	01/14/18 14:00
Client ID:	SV-13	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 20:08		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.037	0.500	0.034	0.064	0.861	0.059	J	1
Dichlorodifluoromethane	0.372	0.200	0.100	1.84	0.989	0.494		1
Chloromethane	0.304	0.200	0.100	0.628	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	12.1	5.00	0.157	22.8	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	3.40	1.00	0.500	8.08	2.38	1.19		1
Trichlorofluoromethane	0.293	0.050	0.025	1.65	0.281	0.140		1
Isopropanol	3.06	0.500	0.153	7.52	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.083	0.050	0.025	0.636	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-15	Date Collected:	01/14/18 14:00
Client ID:	SV-13	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072	1
Chloroform	0.044	0.020	0.010	0.215	0.098	0.049	1
Tetrahydrofuran	0.092	0.200	0.037	0.271	0.590	0.109	J 1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116	1
1,1,1-Trichloroethane	0.210	0.020	0.010	1.15	0.109	0.055	1
Benzene	0.075	0.100	0.050	0.240	0.319	0.160	J 1
Carbon tetrachloride	0.072	0.020	0.010	0.453	0.126	0.063	1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046	1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180	1
Trichloroethene	0.012	0.020	0.010	0.065	0.107	0.054	J 1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126	1
Heptane	ND	0.200	0.032	ND	0.820	0.131	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Toluene	0.140	0.050	0.025	0.528	0.188	0.094	1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085	1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077	1
Tetrachloroethene	0.060	0.020	0.010	0.407	0.136	0.068	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046	1
Ethylbenzene	0.026	0.020	0.010	0.113	0.087	0.043	1
p/m-Xylene	0.088	0.040	0.020	0.382	0.174	0.087	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-15	Date Collected:	01/14/18 14:00
Client ID:	SV-13	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.196	0.020	0.010	0.835	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.035	0.020	0.010	0.152	0.087	0.043	1
1,3,5-Trimethylbenzene	0.010	0.020	0.010	0.049	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.045	0.020	0.010	0.221	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.047	0.050	0.025	0.246	0.262	0.131	J 1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	73		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	82		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-16	Date Collected:	01/14/18 14:42
Client ID:	SV-12	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 20:41		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	ND	0.500	0.034	ND	0.861	0.059		1
Dichlorodifluoromethane	0.366	0.200	0.100	1.81	0.989	0.494		1
Chloromethane	ND	0.200	0.100	ND	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	3.72	5.00	0.157	7.01	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	6.45	1.00	0.500	15.3	2.38	1.19		1
Trichlorofluoromethane	0.296	0.050	0.025	1.66	0.281	0.140		1
Isopropanol	0.925	0.500	0.153	2.27	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.084	0.050	0.025	0.644	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.018	0.020	0.010	0.073	0.081	0.041	J	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.469	0.500	0.250	1.38	1.47	0.737	J	1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-16	Date Collected:	01/14/18 14:42
Client ID:	SV-12	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072	1
Chloroform	0.167	0.020	0.010	0.816	0.098	0.049	1
Tetrahydrofuran	0.039	0.200	0.037	0.115	0.590	0.109	J 1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116	1
1,1,1-Trichloroethane	0.844	0.020	0.010	4.60	0.109	0.055	1
Benzene	ND	0.100	0.050	ND	0.319	0.160	1
Carbon tetrachloride	0.065	0.020	0.010	0.409	0.126	0.063	1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046	1
Bromodichloromethane	0.032	0.020	0.010	0.214	0.134	0.067	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180	1
Trichloroethene	0.083	0.020	0.010	0.446	0.107	0.054	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126	1
Heptane	ND	0.200	0.032	ND	0.820	0.131	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Toluene	0.134	0.050	0.025	0.505	0.188	0.094	1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085	1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077	1
Tetrachloroethene	0.380	0.020	0.010	2.58	0.136	0.068	1
Chlorobenzene	0.010	0.100	0.010	0.046	0.461	0.046	J 1
Ethylbenzene	0.036	0.020	0.010	0.156	0.087	0.043	1
p/m-Xylene	0.126	0.040	0.020	0.547	0.174	0.087	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID: L1801543-16 Date Collected: 01/14/18 14:42
Client ID: SV-12 Date Received: 01/16/18
Sample Location: BEVERLY, MA Field Prep: Not Specified
Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Bromoform	ND	0.020	0.010	ND	0.207	0.103		1
Styrene	0.385	0.020	0.010	1.64	0.085	0.043		1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069		1
o-Xylene	0.048	0.020	0.010	0.208	0.087	0.043		1
1,3,5-Trimethylbenzene	0.016	0.020	0.010	0.079	0.098	0.049	J	1
1,2,4-Trimethylbenzene	0.076	0.020	0.010	0.374	0.098	0.049		1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192		1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060		1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060		1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060		1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074		1
Naphthalene	0.137	0.050	0.025	0.718	0.262	0.131		1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	70		60-140
bromochloromethane	84		60-140
chlorobenzene-d5	87		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-17	Date Collected:	01/14/18 15:38
Client ID:	SV-10	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 21:13		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	ND	0.500	0.034	ND	0.861	0.059		1
Dichlorodifluoromethane	0.338	0.200	0.100	1.67	0.989	0.494		1
Chloromethane	0.166	0.200	0.100	0.343	0.413	0.207	J	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.012	0.020	0.010	0.032	0.053	0.026	J	1
Ethanol	2.39	5.00	0.157	4.50	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	3.31	1.00	0.500	7.86	2.38	1.19		1
Trichlorofluoromethane	0.287	0.050	0.025	1.61	0.281	0.140		1
Isopropanol	1.75	0.500	0.153	4.30	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.074	0.200	0.063	0.230	0.623	0.196	J	1
Freon-113	0.084	0.050	0.025	0.644	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.198	0.020	0.010	0.801	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.604	0.500	0.250	1.78	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-17	Date Collected:	01/14/18 15:38
Client ID:	SV-10	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.025	0.500	0.020	0.090	1.80	0.072	J	1
Chloroform	2.21	0.020	0.010	10.8	0.098	0.049		1
Tetrahydrofuran	0.130	0.200	0.037	0.383	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	0.543	0.020	0.010	2.96	0.109	0.055		1
Benzene	0.069	0.100	0.050	0.220	0.319	0.160	J	1
Carbon tetrachloride	0.081	0.020	0.010	0.510	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	0.013	0.020	0.010	0.087	0.134	0.067	J	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.029	0.020	0.010	0.156	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.239	0.050	0.025	0.901	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.086	0.020	0.010	0.583	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.064	0.020	0.010	0.278	0.087	0.043		1
p/m-Xylene	0.199	0.040	0.020	0.864	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-17	Date Collected:	01/14/18 15:38
Client ID:	SV-10	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.463	0.020	0.010	1.97	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.077	0.020	0.010	0.334	0.087	0.043	1
1,3,5-Trimethylbenzene	0.021	0.020	0.010	0.103	0.098	0.049	1
1,2,4-Trimethylbenzene	0.096	0.020	0.010	0.472	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.149	0.050	0.025	0.781	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	75		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	88		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-18	Date Collected:	01/14/18 16:50
Client ID:	SV-7	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 22:18		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.044	0.500	0.034	0.076	0.861	0.059	J	1
Dichlorodifluoromethane	0.433	0.200	0.100	2.14	0.989	0.494		1
Chloromethane	0.166	0.200	0.100	0.343	0.413	0.207	J	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	11.3	5.00	0.157	21.3	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	13.4	1.00	0.500	31.8	2.38	1.19		1
Trichlorofluoromethane	0.334	0.050	0.025	1.88	0.281	0.140		1
Isopropanol	3.71	0.500	0.153	9.12	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.071	0.050	0.025	0.544	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.218	0.020	0.010	0.882	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.837	0.500	0.250	2.47	1.47	0.737		1
cis-1,2-Dichloroethene	0.038	0.020	0.010	0.151	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-18	Date Collected:	01/14/18 16:50
Client ID:	SV-7	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.096	0.500	0.020	0.346	1.80	0.072	J	1
Chloroform	0.037	0.020	0.010	0.181	0.098	0.049		1
Tetrahydrofuran	0.113	0.200	0.037	0.333	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	0.354	0.020	0.010	1.93	0.109	0.055		1
Benzene	0.108	0.100	0.050	0.345	0.319	0.160		1
Carbon tetrachloride	0.075	0.020	0.010	0.472	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.428	0.020	0.010	2.30	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.352	0.050	0.025	1.33	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.240	0.020	0.010	1.63	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.052	0.020	0.010	0.226	0.087	0.043		1
p/m-Xylene	0.143	0.040	0.020	0.621	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-18	Date Collected:	01/14/18 16:50
Client ID:	SV-7	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.338	0.020	0.010	1.44	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.064	0.020	0.010	0.278	0.087	0.043	1
1,3,5-Trimethylbenzene	0.015	0.020	0.010	0.074	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.059	0.020	0.010	0.290	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	73		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	88		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-19	Date Collected:	01/14/18 17:16
Client ID:	SV-6	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 22:51		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.508	0.500	0.034	0.874	0.861	0.059		1
Dichlorodifluoromethane	0.425	0.200	0.100	2.10	0.989	0.494		1
Chloromethane	0.397	0.200	0.100	0.820	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.015	0.020	0.010	0.033	0.044	0.022	J	1
Bromomethane	0.010	0.020	0.010	0.039	0.078	0.039	J	1
Chloroethane	0.039	0.020	0.010	0.103	0.053	0.026		1
Ethanol	13.7	5.00	0.157	25.8	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	8.30	1.00	0.500	19.7	2.38	1.19		1
Trichlorofluoromethane	0.431	0.050	0.025	2.42	0.281	0.140		1
Isopropanol	5.20	0.500	0.153	12.8	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.075	0.200	0.063	0.234	0.623	0.196	J	1
Freon-113	0.085	0.050	0.025	0.651	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.320	0.020	0.010	1.30	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	1.56	0.500	0.250	4.60	1.47	0.737		1
cis-1,2-Dichloroethene	0.036	0.020	0.010	0.143	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-19	Date Collected:	01/14/18 17:16
Client ID:	SV-6	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.149	0.500	0.020	0.537	1.80	0.072	J	1
Chloroform	0.561	0.020	0.010	2.74	0.098	0.049		1
Tetrahydrofuran	0.311	0.200	0.037	0.917	0.590	0.109		1
1,2-Dichloroethane	0.026	0.020	0.010	0.105	0.081	0.041		1
n-Hexane	0.140	0.200	0.033	0.493	0.705	0.116	J	1
1,1,1-Trichloroethane	3.00	0.020	0.010	16.4	0.109	0.055		1
Benzene	0.349	0.100	0.050	1.11	0.319	0.160		1
Carbon tetrachloride	0.688	0.020	0.010	4.33	0.126	0.063		1
Cyclohexane	0.064	0.200	0.030	0.220	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	6.55	0.020	0.010	35.2	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.287	0.200	0.032	1.18	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	0.456	0.500	0.250	1.87	2.05	1.02	J	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	2.98	0.050	0.025	11.2	0.188	0.094		1
2-Hexanone	0.220	0.200	0.030	0.902	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.196	0.020	0.010	1.33	0.136	0.068		1
Chlorobenzene	0.028	0.100	0.010	0.129	0.461	0.046	J	1
Ethylbenzene	0.273	0.020	0.010	1.19	0.087	0.043		1
p/m-Xylene	0.688	0.040	0.020	2.99	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-19	Date Collected:	01/14/18 17:16
Client ID:	SV-6	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.537	0.020	0.010	2.29	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.300	0.020	0.010	1.30	0.087	0.043	1
1,3,5-Trimethylbenzene	0.543	0.020	0.010	2.67	0.098	0.049	1
1,2,4-Trimethylbenzene	0.633	0.020	0.010	3.11	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	0.031	0.020	0.010	0.186	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.114	0.050	0.025	0.598	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	66		60-140
bromochloromethane	82		60-140
chlorobenzene-d5	92		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-20	Date Collected:	01/14/18 17:28
Client ID:	SV-4	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 23:23		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.034	0.500	0.034	0.059	0.861	0.059	J	1
Dichlorodifluoromethane	0.405	0.200	0.100	2.00	0.989	0.494		1
Chloromethane	0.136	0.200	0.100	0.281	0.413	0.207	J	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.024	0.020	0.010	0.063	0.053	0.026		1
Ethanol	2.71	5.00	0.157	5.11	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	11.1	1.00	0.500	26.4	2.38	1.19		1
Trichlorofluoromethane	0.667	0.050	0.025	3.75	0.281	0.140		1
Isopropanol	1.53	0.500	0.153	3.76	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.081	0.050	0.025	0.621	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	1.89	0.500	0.250	5.57	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-20	Date Collected:	01/14/18 17:28
Client ID:	SV-4	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.061	0.500	0.020	0.220	1.80	0.072	J	1
Chloroform	0.043	0.020	0.010	0.210	0.098	0.049		1
Tetrahydrofuran	0.081	0.200	0.037	0.239	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	0.707	0.020	0.010	3.86	0.109	0.055		1
Benzene	0.087	0.100	0.050	0.278	0.319	0.160	J	1
Carbon tetrachloride	0.050	0.020	0.010	0.315	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.015	0.020	0.010	0.081	0.107	0.054	J	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.295	0.050	0.025	1.11	0.188	0.094		1
2-Hexanone	0.038	0.200	0.030	0.156	0.820	0.123	J	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.050	0.020	0.010	0.339	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.079	0.020	0.010	0.343	0.087	0.043		1
p/m-Xylene	0.227	0.040	0.020	0.986	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-20	Date Collected:	01/14/18 17:28
Client ID:	SV-4	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.327	0.020	0.010	1.39	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.135	0.020	0.010	0.586	0.087	0.043	1
1,3,5-Trimethylbenzene	0.082	0.020	0.010	0.403	0.098	0.049	1
1,2,4-Trimethylbenzene	0.212	0.020	0.010	1.04	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.089	0.050	0.025	0.467	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	76		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	89		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-21	Date Collected:	01/14/18 08:38
Client ID:	S-149J.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 22:01		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.099	0.500	0.034	0.170	0.861	0.059	J	1
Dichlorodifluoromethane	0.336	0.200	0.100	1.66	0.989	0.494		1
Chloromethane	0.521	0.200	0.100	1.08	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	60.4	5.00	0.157	114	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	12.0	1.00	0.500	28.5	2.38	1.19		1
Trichlorofluoromethane	0.210	0.050	0.025	1.18	0.281	0.140		1
Isopropanol	12.7	0.500	0.153	31.2	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	0.756	0.500	0.250	2.63	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.064	0.050	0.025	0.491	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.571	0.500	0.250	1.68	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-21	Date Collected:	01/14/18 08:38
Client ID:	S-149J.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.132	0.500	0.020	0.476	1.80	0.072	J	1
Chloroform	0.055	0.020	0.010	0.269	0.098	0.049		1
Tetrahydrofuran	0.073	0.200	0.037	0.215	0.590	0.109	J	1
1,2-Dichloroethane	0.053	0.020	0.010	0.215	0.081	0.041		1
n-Hexane	0.063	0.200	0.033	0.222	0.705	0.116	J	1
1,1,1-Trichloroethane	0.027	0.020	0.010	0.147	0.109	0.055		1
Benzene	0.094	0.100	0.050	0.300	0.319	0.160	J	1
Carbon tetrachloride	0.078	0.020	0.010	0.491	0.126	0.063		1
Cyclohexane	0.036	0.200	0.030	0.124	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.039	0.200	0.032	0.160	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.368	0.050	0.025	1.39	0.188	0.094		1
2-Hexanone	0.053	0.200	0.030	0.217	0.820	0.123	J	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.041	0.020	0.010	0.278	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.029	0.020	0.010	0.126	0.087	0.043		1
p/m-Xylene	0.083	0.040	0.020	0.361	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-21	Date Collected:	01/14/18 08:38
Client ID:	S-149J.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.061	0.020	0.010	0.260	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.036	0.020	0.010	0.156	0.087	0.043	1
1,3,5-Trimethylbenzene	0.012	0.020	0.010	0.059	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.041	0.020	0.010	0.202	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	85		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	84		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-22	Date Collected:	01/14/18 08:41
Client ID:	S-149J.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 22:36		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.126	0.500	0.034	0.217	0.861	0.059	J	1
Dichlorodifluoromethane	0.498	0.200	0.100	2.46	0.989	0.494		1
Chloromethane	0.524	0.200	0.100	1.08	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.012	0.020	0.010	0.032	0.053	0.026	J	1
Ethanol	60.6	5.00	0.157	114	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	10.8	1.00	0.500	25.7	2.38	1.19		1
Trichlorofluoromethane	0.217	0.050	0.025	1.22	0.281	0.140		1
Isopropanol	9.88	0.500	0.153	24.3	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	5.32	0.500	0.250	18.5	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.066	0.050	0.025	0.506	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.808	0.500	0.250	2.38	1.47	0.737		1
cis-1,2-Dichloroethene	0.010	0.020	0.010	0.040	0.079	0.040	J	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-22	Date Collected:	01/14/18 08:41
Client ID:	S-149J.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.222	0.500	0.020	0.800	1.80	0.072	J	1
Chloroform	0.055	0.020	0.010	0.269	0.098	0.049		1
Tetrahydrofuran	0.080	0.200	0.037	0.236	0.590	0.109	J	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	0.540	0.200	0.033	1.90	0.705	0.116		1
1,1,1-Trichloroethane	0.028	0.020	0.010	0.153	0.109	0.055		1
Benzene	0.134	0.100	0.050	0.428	0.319	0.160		1
Carbon tetrachloride	0.082	0.020	0.010	0.516	0.126	0.063		1
Cyclohexane	0.034	0.200	0.030	0.117	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.013	0.020	0.010	0.070	0.107	0.054	J	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.053	0.200	0.032	0.217	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.426	0.050	0.025	1.61	0.188	0.094		1
2-Hexanone	0.042	0.200	0.030	0.172	0.820	0.123	J	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.039	0.020	0.010	0.264	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.039	0.020	0.010	0.169	0.087	0.043		1
p/m-Xylene	0.098	0.040	0.020	0.426	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-22	Date Collected:	01/14/18 08:41
Client ID:	S-149J.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.072	0.020	0.010	0.307	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.040	0.020	0.010	0.174	0.087	0.043	1
1,3,5-Trimethylbenzene	0.010	0.020	0.010	0.049	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.037	0.020	0.010	0.182	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	80		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	82		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-23	Date Collected:	01/14/18 08:40
Client ID:	S-149J.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 23:10		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.088	0.500	0.034	0.151	0.861	0.059	J	1
Dichlorodifluoromethane	0.394	0.200	0.100	1.95	0.989	0.494		1
Chloromethane	0.512	0.200	0.100	1.06	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	0.010	0.020	0.010	0.039	0.078	0.039	J	1
Chloroethane	0.010	0.020	0.010	0.026	0.053	0.026	J	1
Ethanol	58.8	5.00	0.157	111	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	10.2	1.00	0.500	24.2	2.38	1.19		1
Trichlorofluoromethane	0.214	0.050	0.025	1.20	0.281	0.140		1
Isopropanol	10.3	0.500	0.153	25.3	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.064	0.050	0.025	0.491	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.468	0.500	0.250	1.38	1.47	0.737	J	1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-23	Date Collected:	01/14/18 08:40
Client ID:	S-149J.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.121	0.500	0.020	0.436	1.80	0.072	J	1
Chloroform	0.051	0.020	0.010	0.249	0.098	0.049		1
Tetrahydrofuran	0.065	0.200	0.037	0.192	0.590	0.109	J	1
1,2-Dichloroethane	0.032	0.020	0.010	0.130	0.081	0.041		1
n-Hexane	0.052	0.200	0.033	0.183	0.705	0.116	J	1
1,1,1-Trichloroethane	0.024	0.020	0.010	0.131	0.109	0.055		1
Benzene	0.102	0.100	0.050	0.326	0.319	0.160		1
Carbon tetrachloride	0.078	0.020	0.010	0.491	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.035	0.200	0.032	0.143	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.295	0.050	0.025	1.11	0.188	0.094		1
2-Hexanone	0.043	0.200	0.030	0.176	0.820	0.123	J	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.032	0.020	0.010	0.217	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.028	0.020	0.010	0.122	0.087	0.043		1
p/m-Xylene	0.070	0.040	0.020	0.304	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-23	Date Collected:	01/14/18 08:40
Client ID:	S-149J.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.058	0.020	0.010	0.247	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.032	0.020	0.010	0.139	0.087	0.043	1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
1,2,4-Trimethylbenzene	0.031	0.020	0.010	0.152	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	84		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	85		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-24	Date Collected:	01/14/18 08:55
Client ID:	S-157J.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/19/18 23:45		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.112	0.500	0.034	0.193	0.861	0.059	J	1
Dichlorodifluoromethane	0.398	0.200	0.100	1.97	0.989	0.494		1
Chloromethane	0.527	0.200	0.100	1.09	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	0.010	0.020	0.010	0.039	0.078	0.039	J	1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	98.4	5.00	0.157	185	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	7.28	1.00	0.500	17.3	2.38	1.19		1
Trichlorofluoromethane	0.227	0.050	0.025	1.28	0.281	0.140		1
Isopropanol	29.6	0.500	0.153	72.8	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	0.344	0.500	0.250	1.20	1.74	0.869	J	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.065	0.050	0.025	0.498	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.546	0.500	0.250	1.61	1.47	0.737		1
cis-1,2-Dichloroethene	0.045	0.020	0.010	0.178	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-24	Date Collected:	01/14/18 08:55
Client ID:	S-157J.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.406	0.500	0.020	1.46	1.80	0.072	J	1
Chloroform	0.057	0.020	0.010	0.278	0.098	0.049		1
Tetrahydrofuran	0.130	0.200	0.037	0.383	0.590	0.109	J	1
1,2-Dichloroethane	0.019	0.020	0.010	0.077	0.081	0.041	J	1
n-Hexane	0.135	0.200	0.033	0.476	0.705	0.116	J	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Benzene	0.113	0.100	0.050	0.361	0.319	0.160		1
Carbon tetrachloride	0.086	0.020	0.010	0.541	0.126	0.063		1
Cyclohexane	0.052	0.200	0.030	0.179	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.018	0.020	0.010	0.097	0.107	0.054	J	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.086	0.200	0.032	0.352	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	1.15	0.050	0.025	4.33	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.086	0.020	0.010	0.583	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.087	0.020	0.010	0.378	0.087	0.043		1
p/m-Xylene	0.165	0.040	0.020	0.717	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-24	Date Collected:	01/14/18 08:55
Client ID:	S-157J.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.110	0.020	0.010	0.468	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.067	0.020	0.010	0.291	0.087	0.043	1
1,3,5-Trimethylbenzene	0.032	0.020	0.010	0.157	0.098	0.049	1
1,2,4-Trimethylbenzene	0.121	0.020	0.010	0.595	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	0.011	0.020	0.010	0.066	0.120	0.060	J 1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.042	0.050	0.025	0.220	0.262	0.131	J 1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	79		60-140
bromochloromethane	86		60-140
chlorobenzene-d5	80		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-25	Date Collected:	01/14/18 09:00
Client ID:	S-157J.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 00:20		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.110	0.500	0.034	0.189	0.861	0.059	J	1
Dichlorodifluoromethane	0.394	0.200	0.100	1.95	0.989	0.494		1
Chloromethane	0.536	0.200	0.100	1.11	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.011	0.020	0.010	0.029	0.053	0.026	J	1
Ethanol	84.8	5.00	0.157	160	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	6.10	1.00	0.500	14.5	2.38	1.19		1
Trichlorofluoromethane	0.229	0.050	0.025	1.29	0.281	0.140		1
Isopropanol	24.2	0.500	0.153	59.5	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	0.393	0.500	0.250	1.37	1.74	0.869	J	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.076	0.050	0.025	0.583	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.495	0.500	0.250	1.46	1.47	0.737	J	1
cis-1,2-Dichloroethene	0.037	0.020	0.010	0.147	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-25	Date Collected:	01/14/18 09:00
Client ID:	S-157J.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.219	0.500	0.020	0.789	1.80	0.072	J	1
Chloroform	0.048	0.020	0.010	0.234	0.098	0.049		1
Tetrahydrofuran	0.149	0.200	0.037	0.439	0.590	0.109	J	1
1,2-Dichloroethane	0.020	0.020	0.010	0.081	0.081	0.041		1
n-Hexane	0.103	0.200	0.033	0.363	0.705	0.116	J	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Benzene	0.111	0.100	0.050	0.355	0.319	0.160		1
Carbon tetrachloride	0.086	0.020	0.010	0.541	0.126	0.063		1
Cyclohexane	0.044	0.200	0.030	0.151	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.019	0.020	0.010	0.102	0.107	0.054	J	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.075	0.200	0.032	0.307	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.956	0.050	0.025	3.60	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.076	0.020	0.010	0.515	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.074	0.020	0.010	0.321	0.087	0.043		1
p/m-Xylene	0.142	0.040	0.020	0.617	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-25	Date Collected:	01/14/18 09:00
Client ID:	S-157J.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.087	0.020	0.010	0.370	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.059	0.020	0.010	0.256	0.087	0.043	1
1,3,5-Trimethylbenzene	0.026	0.020	0.010	0.128	0.098	0.049	1
1,2,4-Trimethylbenzene	0.102	0.020	0.010	0.501	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.036	0.050	0.025	0.189	0.262	0.131	J 1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	77		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	80		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-26	Date Collected:	01/14/18 08:57
Client ID:	S-157J.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 00:54		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.093	0.500	0.034	0.160	0.861	0.059	J	1
Dichlorodifluoromethane	0.347	0.200	0.100	1.72	0.989	0.494		1
Chloromethane	0.518	0.200	0.100	1.07	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	0.010	0.020	0.010	0.039	0.078	0.039	J	1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026		1
Ethanol	76.8	5.00	0.157	145	9.42	0.296		1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	5.56	1.00	0.500	13.2	2.38	1.19		1
Trichlorofluoromethane	0.222	0.050	0.025	1.25	0.281	0.140		1
Isopropanol	22.9	0.500	0.153	56.3	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.065	0.050	0.025	0.498	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.511	0.500	0.250	1.51	1.47	0.737		1
cis-1,2-Dichloroethene	0.036	0.020	0.010	0.143	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID: L1801543-26 Date Collected: 01/14/18 08:57
Client ID: S-157J.2 Date Received: 01/16/18
Sample Location: BEVERLY, MA Field Prep: Not Specified
Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.223	0.500	0.020	0.804	1.80	0.072	J	1
Chloroform	0.047	0.020	0.010	0.230	0.098	0.049		1
Tetrahydrofuran	0.243	0.200	0.037	0.717	0.590	0.109		1
1,2-Dichloroethane	0.020	0.020	0.010	0.081	0.081	0.041		1
n-Hexane	0.095	0.200	0.033	0.335	0.705	0.116	J	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Benzene	0.108	0.100	0.050	0.345	0.319	0.160		1
Carbon tetrachloride	0.083	0.020	0.010	0.522	0.126	0.063		1
Cyclohexane	0.043	0.200	0.030	0.148	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.022	0.020	0.010	0.118	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.075	0.200	0.032	0.307	0.820	0.131	J	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	1.05	0.050	0.025	3.96	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.075	0.020	0.010	0.509	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.078	0.020	0.010	0.339	0.087	0.043		1
p/m-Xylene	0.166	0.040	0.020	0.721	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-26	Date Collected:	01/14/18 08:57
Client ID:	S-157J.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.089	0.020	0.010	0.379	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.069	0.020	0.010	0.300	0.087	0.043	1
1,3,5-Trimethylbenzene	0.026	0.020	0.010	0.128	0.098	0.049	1
1,2,4-Trimethylbenzene	0.102	0.020	0.010	0.501	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	81		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	82		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-27	Date Collected:	01/14/18 09:15
Client ID:	S-135C.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 01:30		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.147	0.500	0.034	0.253	0.861	0.059	J	1
Dichlorodifluoromethane	0.435	0.200	0.100	2.15	0.989	0.494		1
Chloromethane	0.524	0.200	0.100	1.08	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.013	0.020	0.010	0.029	0.044	0.022	J	1
Bromomethane	0.010	0.020	0.010	0.039	0.078	0.039	J	1
Chloroethane	0.030	0.020	0.010	0.079	0.053	0.026		1
Ethanol	331	5.00	0.157	624	9.42	0.296	E	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	14.4	1.00	0.500	34.2	2.38	1.19		1
Trichlorofluoromethane	0.280	0.050	0.025	1.57	0.281	0.140		1
Isopropanol	88.0	0.500	0.153	216	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.066	0.050	0.025	0.506	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.010	0.020	0.010	0.041	0.081	0.041	J	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.748	0.500	0.250	2.21	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-27	Date Collected:	01/14/18 09:15
Client ID:	S-135C.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.864	0.500	0.020	3.11	1.80	0.072		1
Chloroform	0.041	0.020	0.010	0.200	0.098	0.049		1
Tetrahydrofuran	0.090	0.200	0.037	0.265	0.590	0.109	J	1
1,2-Dichloroethane	0.033	0.020	0.010	0.134	0.081	0.041		1
n-Hexane	0.088	0.200	0.033	0.310	0.705	0.116	J	1
1,1,1-Trichloroethane	0.026	0.020	0.010	0.142	0.109	0.055		1
Benzene	0.128	0.100	0.050	0.409	0.319	0.160		1
Carbon tetrachloride	0.087	0.020	0.010	0.547	0.126	0.063		1
Cyclohexane	0.083	0.200	0.030	0.286	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.010	0.020	0.010	0.054	0.107	0.054	J	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.386	0.200	0.032	1.58	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	0.289	0.500	0.250	1.18	2.05	1.02	J	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	3.14	0.050	0.025	11.8	0.188	0.094		1
2-Hexanone	0.066	0.200	0.030	0.270	0.820	0.123	J	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.017	0.020	0.010	0.115	0.136	0.068	J	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.082	0.020	0.010	0.356	0.087	0.043		1
p/m-Xylene	0.403	0.040	0.020	1.75	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-27	Date Collected:	01/14/18 09:15
Client ID:	S-135C.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.683	0.020	0.010	2.91	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.107	0.020	0.010	0.465	0.087	0.043	1
1,3,5-Trimethylbenzene	0.062	0.020	0.010	0.305	0.098	0.049	1
1,2,4-Trimethylbenzene	0.241	0.020	0.010	1.18	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.567	0.050	0.025	2.97	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	79		60-140
bromochloromethane	86		60-140
chlorobenzene-d5	83		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-28	Date Collected:	01/14/18 09:15
Client ID:	DUPLICATE-IA-1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 02:05		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.136	0.500	0.034	0.234	0.861	0.059	J	1
Dichlorodifluoromethane	0.327	0.200	0.100	1.62	0.989	0.494		1
Chloromethane	0.512	0.200	0.100	1.06	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.012	0.020	0.010	0.027	0.044	0.022	J	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.032	0.020	0.010	0.084	0.053	0.026		1
Ethanol	328	5.00	0.157	618	9.42	0.296	E	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	14.4	1.00	0.500	34.2	2.38	1.19		1
Trichlorofluoromethane	0.278	0.050	0.025	1.56	0.281	0.140		1
Isopropanol	86.2	0.500	0.153	212	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	0.302	0.500	0.250	1.05	1.74	0.869	J	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.064	0.050	0.025	0.491	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.010	0.020	0.010	0.041	0.081	0.041	J	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.728	0.500	0.250	2.15	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-28	Date Collected:	01/14/18 09:15
Client ID:	DUPLICATE-IA-1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.855	0.500	0.020	3.08	1.80	0.072		1
Chloroform	0.039	0.020	0.010	0.190	0.098	0.049		1
Tetrahydrofuran	0.090	0.200	0.037	0.265	0.590	0.109	J	1
1,2-Dichloroethane	0.032	0.020	0.010	0.130	0.081	0.041		1
n-Hexane	0.088	0.200	0.033	0.310	0.705	0.116	J	1
1,1,1-Trichloroethane	0.025	0.020	0.010	0.136	0.109	0.055		1
Benzene	0.128	0.100	0.050	0.409	0.319	0.160		1
Carbon tetrachloride	0.083	0.020	0.010	0.522	0.126	0.063		1
Cyclohexane	0.083	0.200	0.030	0.286	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.010	0.020	0.010	0.054	0.107	0.054	J	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.376	0.200	0.032	1.54	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	0.283	0.500	0.250	1.16	2.05	1.02	J	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	3.08	0.050	0.025	11.6	0.188	0.094		1
2-Hexanone	0.066	0.200	0.030	0.270	0.820	0.123	J	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.016	0.020	0.010	0.108	0.136	0.068	J	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.081	0.020	0.010	0.352	0.087	0.043		1
p/m-Xylene	0.396	0.040	0.020	1.72	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-28	Date Collected:	01/14/18 09:15
Client ID:	DUPLICATE-IA-1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.676	0.020	0.010	2.88	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.105	0.020	0.010	0.456	0.087	0.043	1
1,3,5-Trimethylbenzene	0.065	0.020	0.010	0.320	0.098	0.049	1
1,2,4-Trimethylbenzene	0.236	0.020	0.010	1.16	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.620	0.050	0.025	3.25	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	82		60-140
bromochloromethane	89		60-140
chlorobenzene-d5	84		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-29	Date Collected:	01/14/18 09:16
Client ID:	S-135C.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 02:40		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.158	0.500	0.034	0.272	0.861	0.059	J	1
Dichlorodifluoromethane	0.451	0.200	0.100	2.23	0.989	0.494		1
Chloromethane	0.518	0.200	0.100	1.07	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.013	0.020	0.010	0.029	0.044	0.022	J	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.039	0.020	0.010	0.103	0.053	0.026		1
Ethanol	364	5.00	0.157	686	9.42	0.296	E	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	16.6	1.00	0.500	39.4	2.38	1.19		1
Trichlorofluoromethane	0.291	0.050	0.025	1.64	0.281	0.140		1
Isopropanol	98.2	0.500	0.153	241	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.064	0.050	0.025	0.491	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.012	0.020	0.010	0.049	0.081	0.041	J	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.939	0.500	0.250	2.77	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-29	Date Collected:	01/14/18 09:16
Client ID:	S-135C.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	1.09	0.500	0.020	3.93	1.80	0.072		1
Chloroform	0.042	0.020	0.010	0.205	0.098	0.049		1
Tetrahydrofuran	0.109	0.200	0.037	0.321	0.590	0.109	J	1
1,2-Dichloroethane	0.033	0.020	0.010	0.134	0.081	0.041		1
n-Hexane	0.092	0.200	0.033	0.324	0.705	0.116	J	1
1,1,1-Trichloroethane	0.031	0.020	0.010	0.169	0.109	0.055		1
Benzene	0.126	0.100	0.050	0.403	0.319	0.160		1
Carbon tetrachloride	0.081	0.020	0.010	0.510	0.126	0.063		1
Cyclohexane	0.061	0.200	0.030	0.210	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.010	0.020	0.010	0.054	0.107	0.054	J	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.449	0.200	0.032	1.84	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	0.338	0.500	0.250	1.39	2.05	1.02	J	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	3.78	0.050	0.025	14.2	0.188	0.094		1
2-Hexanone	0.077	0.200	0.030	0.316	0.820	0.123	J	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.019	0.020	0.010	0.129	0.136	0.068	J	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.093	0.020	0.010	0.404	0.087	0.043		1
p/m-Xylene	0.451	0.040	0.020	1.96	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-29	Date Collected:	01/14/18 09:16
Client ID:	S-135C.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.672	0.020	0.010	2.86	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.113	0.020	0.010	0.491	0.087	0.043	1
1,3,5-Trimethylbenzene	0.067	0.020	0.010	0.329	0.098	0.049	1
1,2,4-Trimethylbenzene	0.245	0.020	0.010	1.20	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.554	0.050	0.025	2.90	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	85		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	87		60-140

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-30	Date Collected:	01/14/18 09:17
Client ID:	S-135C.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 03:15		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	0.147	0.500	0.034	0.253	0.861	0.059	J	1
Dichlorodifluoromethane	0.387	0.200	0.100	1.91	0.989	0.494		1
Chloromethane	0.526	0.200	0.100	1.09	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	0.012	0.020	0.010	0.027	0.044	0.022	J	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.029	0.020	0.010	0.077	0.053	0.026		1
Ethanol	371	5.00	0.157	699	9.42	0.296	E	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	18.4	1.00	0.500	43.7	2.38	1.19		1
Trichlorofluoromethane	0.308	0.050	0.025	1.73	0.281	0.140		1
Isopropanol	110	0.500	0.153	270	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	0.386	0.500	0.250	1.34	1.74	0.869	J	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.072	0.050	0.025	0.552	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	0.014	0.020	0.010	0.057	0.081	0.041	J	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	0.999	0.500	0.250	2.95	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-30	Date Collected:	01/14/18 09:17
Client ID:	S-135C.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	1.36	0.500	0.020	4.90	1.80	0.072		1
Chloroform	0.044	0.020	0.010	0.215	0.098	0.049		1
Tetrahydrofuran	0.101	0.200	0.037	0.298	0.590	0.109	J	1
1,2-Dichloroethane	0.037	0.020	0.010	0.150	0.081	0.041		1
n-Hexane	0.123	0.200	0.033	0.433	0.705	0.116	J	1
1,1,1-Trichloroethane	0.031	0.020	0.010	0.169	0.109	0.055		1
Benzene	0.135	0.100	0.050	0.431	0.319	0.160		1
Carbon tetrachloride	0.082	0.020	0.010	0.516	0.126	0.063		1
Cyclohexane	0.034	0.200	0.030	0.117	0.688	0.103	J	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.010	0.020	0.010	0.054	0.107	0.054	J	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	0.494	0.200	0.032	2.02	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	0.416	0.500	0.250	1.70	2.05	1.02	J	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	4.43	0.050	0.025	16.7	0.188	0.094		1
2-Hexanone	0.109	0.200	0.030	0.447	0.820	0.123	J	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.016	0.020	0.010	0.108	0.136	0.068	J	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.095	0.020	0.010	0.413	0.087	0.043		1
p/m-Xylene	0.523	0.040	0.020	2.27	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-30	Date Collected:	01/14/18 09:17
Client ID:	S-135C.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.465	0.020	0.010	1.98	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.117	0.020	0.010	0.508	0.087	0.043	1
1,3,5-Trimethylbenzene	0.061	0.020	0.010	0.300	0.098	0.049	1
1,2,4-Trimethylbenzene	0.226	0.020	0.010	1.11	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.301	0.050	0.025	1.58	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	81		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	82		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-31	Date Collected:	01/15/18 20:50
Client ID:	SG-3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/20/18 23:56		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	ND	0.500	0.034	ND	0.861	0.059		1
Dichlorodifluoromethane	0.433	0.200	0.100	2.14	0.989	0.494		1
Chloromethane	0.219	0.200	0.100	0.452	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.011	0.020	0.010	0.029	0.053	0.026	J	1
Ethanol	0.975	5.00	0.157	1.84	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	1.15	1.00	0.500	2.73	2.38	1.19		1
Trichlorofluoromethane	0.307	0.050	0.025	1.73	0.281	0.140		1
Isopropanol	0.410	0.500	0.153	1.01	1.23	0.376	J	1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.118	0.050	0.025	0.904	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-31	Date Collected:	01/15/18 20:50
Client ID:	SG-3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072	1
Chloroform	0.247	0.020	0.010	1.21	0.098	0.049	1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116	1
1,1,1-Trichloroethane	0.016	0.020	0.010	0.087	0.109	0.055	J 1
Benzene	0.057	0.100	0.050	0.182	0.319	0.160	J 1
Carbon tetrachloride	0.106	0.020	0.010	0.667	0.126	0.063	1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046	1
Bromodichloromethane	0.024	0.020	0.010	0.161	0.134	0.067	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180	1
Trichloroethene	0.257	0.020	0.010	1.38	0.107	0.054	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126	1
Heptane	ND	0.200	0.032	ND	0.820	0.131	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Toluene	0.083	0.050	0.025	0.313	0.188	0.094	1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085	1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077	1
Tetrachloroethene	0.387	0.020	0.010	2.62	0.136	0.068	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046	1
Ethylbenzene	0.021	0.020	0.010	0.091	0.087	0.043	1
p/m-Xylene	0.072	0.040	0.020	0.313	0.174	0.087	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-31	Date Collected:	01/15/18 20:50
Client ID:	SG-3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.203	0.020	0.010	0.864	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.028	0.020	0.010	0.122	0.087	0.043	1
1,3,5-Trimethylbenzene	0.015	0.020	0.010	0.074	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.066	0.020	0.010	0.324	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.104	0.050	0.025	0.545	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	66		60-140
bromochloromethane	80		60-140
chlorobenzene-d5	84		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-32	Date Collected:	01/15/18 20:50
Client ID:	DUPLICATE2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/21/18 00:29		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	ND	0.500	0.034	ND	0.861	0.059		1
Dichlorodifluoromethane	0.366	0.200	0.100	1.81	0.989	0.494		1
Chloromethane	0.350	0.200	0.100	0.723	0.413	0.207		1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.017	0.020	0.010	0.045	0.053	0.026	J	1
Ethanol	1.24	5.00	0.157	2.34	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	1.34	1.00	0.500	3.18	2.38	1.19		1
Trichlorofluoromethane	0.308	0.050	0.025	1.73	0.281	0.140		1
Isopropanol	0.477	0.500	0.153	1.17	1.23	0.376	J	1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196		1
Freon-113	0.102	0.050	0.025	0.782	0.383	0.192		1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID: L1801543-32 Date Collected: 01/15/18 20:50
Client ID: DUPLICATE2 Date Received: 01/16/18
Sample Location: BEVERLY, MA Field Prep: Not Specified
Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Ethyl Acetate	0.022	0.500	0.020	0.079	1.80	0.072	J	1
Chloroform	0.202	0.020	0.010	0.986	0.098	0.049		1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109		1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041		1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116		1
1,1,1-Trichloroethane	0.017	0.020	0.010	0.093	0.109	0.055	J	1
Benzene	ND	0.100	0.050	ND	0.319	0.160		1
Carbon tetrachloride	0.107	0.020	0.010	0.673	0.126	0.063		1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103		1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046		1
Bromodichloromethane	0.024	0.020	0.010	0.161	0.134	0.067		1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180		1
Trichloroethene	0.282	0.020	0.010	1.52	0.107	0.054		1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126		1
Heptane	ND	0.200	0.032	ND	0.820	0.131		1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02		1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045		1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055		1
Toluene	0.075	0.050	0.025	0.283	0.188	0.094		1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123		1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085		1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077		1
Tetrachloroethene	0.430	0.020	0.010	2.92	0.136	0.068		1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046		1
Ethylbenzene	0.020	0.020	0.010	0.087	0.087	0.043		1
p/m-Xylene	0.074	0.040	0.020	0.321	0.174	0.087		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-32	Date Collected:	01/15/18 20:50
Client ID:	DUPLICATE2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.220	0.020	0.010	0.937	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.029	0.020	0.010	0.126	0.087	0.043	1
1,3,5-Trimethylbenzene	0.017	0.020	0.010	0.084	0.098	0.049	J 1
1,2,4-Trimethylbenzene	0.075	0.020	0.010	0.369	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	0.025	0.050	0.010	0.186	0.371	0.074	J 1
Naphthalene	16.8	0.050	0.025	88.1	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	65		60-140
bromochloromethane	80		60-140
chlorobenzene-d5	81		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-33	Date Collected:	01/15/18 20:45
Client ID:	SG-4	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Anaytical Method:	101,TO15-SIM		
Analytical Date:	01/21/18 01:01		
Analyst:	MB		

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
MCP Volatile Organics in Air by SIM - Mansfield Lab								
Propylene	7.74	0.500	0.034	13.3	0.861	0.059		1
Dichlorodifluoromethane	0.105	0.200	0.100	0.519	0.989	0.494	J	1
Chloromethane	0.122	0.200	0.100	0.252	0.413	0.207	J	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175		1
Vinyl chloride	0.074	0.020	0.010	0.189	0.051	0.026		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039		1
Chloroethane	0.032	0.020	0.010	0.084	0.053	0.026		1
Ethanol	1.72	5.00	0.157	3.24	9.42	0.296	J	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101		1
Acetone	ND	1.00	0.500	ND	2.38	1.19		1
Trichlorofluoromethane	0.049	0.050	0.025	0.275	0.281	0.140	J	1
Isopropanol	0.914	0.500	0.153	2.25	1.23	0.376		1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040		1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869		1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063		1
Carbon disulfide	0.546	0.200	0.063	1.70	0.623	0.196		1
Freon-113	ND	0.050	0.025	ND	0.383	0.192		1
trans-1,2-Dichloroethene	0.014	0.020	0.010	0.056	0.079	0.040	J	1
1,1-Dichloroethane	0.118	0.020	0.010	0.478	0.081	0.041		1
Methyl tert butyl ether	0.295	0.200	0.010	1.06	0.721	0.036		1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095		1
2-Butanone	2.48	0.500	0.250	7.31	1.47	0.737		1
cis-1,2-Dichloroethene	0.052	0.020	0.010	0.206	0.079	0.040		1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-33	Date Collected:	01/15/18 20:45
Client ID:	SG-4	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072	1
Chloroform	0.011	0.020	0.010	0.054	0.098	0.049	J 1
Tetrahydrofuran	0.265	0.200	0.037	0.782	0.590	0.109	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
n-Hexane	4.20	0.200	0.033	14.8	0.705	0.116	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Benzene	0.746	0.100	0.050	2.38	0.319	0.160	1
Carbon tetrachloride	0.020	0.020	0.010	0.126	0.126	0.063	1
Cyclohexane	2.45	0.200	0.030	8.43	0.688	0.103	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046	1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180	1
Trichloroethene	0.026	0.020	0.010	0.140	0.107	0.054	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126	1
Heptane	0.919	0.200	0.032	3.77	0.820	0.131	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Toluene	0.693	0.050	0.025	2.61	0.188	0.094	1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085	1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077	1
Tetrachloroethene	0.100	0.020	0.010	0.678	0.136	0.068	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046	1
Ethylbenzene	0.113	0.020	0.010	0.491	0.087	0.043	1
p/m-Xylene	0.457	0.040	0.020	1.99	0.174	0.087	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-33	Date Collected:	01/15/18 20:45
Client ID:	SG-4	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	0.561	0.020	0.010	2.39	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	0.153	0.020	0.010	0.665	0.087	0.043	1
1,3,5-Trimethylbenzene	0.098	0.020	0.010	0.482	0.098	0.049	1
1,2,4-Trimethylbenzene	0.146	0.020	0.010	0.718	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	0.017	0.020	0.010	0.102	0.120	0.060	J 1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	0.667	0.050	0.025	3.50	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	79		60-140
bromochloromethane	86		60-140
chlorobenzene-d5	100		60-140



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis

Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/19/18 15:51

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-07,21-30 Batch: WG1082316-4							
Propylene	ND	0.500	0.034	ND	0.861	0.059	1
Dichlorodifluoromethane	ND	0.200	0.100	ND	0.989	0.494	1
Chloromethane	ND	0.200	0.100	ND	0.413	0.207	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175	1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026	1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039	1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026	1
Ethanol	ND	5.00	0.157	ND	9.42	0.296	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101	1
Acetone	ND	1.00	0.500	ND	2.38	1.19	1
Trichlorofluoromethane	ND	0.050	0.025	ND	0.281	0.140	1
Isopropanol	ND	0.500	0.153	ND	1.23	0.376	1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063	1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196	1
Freon-113	ND	0.050	0.025	ND	0.383	0.192	1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036	1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095	1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737	1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis

Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/19/18 15:51

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-07,21-30 Batch: WG1082316-4							
Chloroform	ND	0.020	0.010	ND	0.098	0.049	1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Benzene	ND	0.100	0.050	ND	0.319	0.160	1
Carbon tetrachloride	ND	0.020	0.010	ND	0.126	0.063	1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046	1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180	1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126	1
Heptane	ND	0.200	0.032	ND	0.820	0.131	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Toluene	ND	0.050	0.025	ND	0.188	0.094	1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085	1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077	1
Tetrachloroethene	ND	0.020	0.010	ND	0.136	0.068	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/19/18 15:51

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-07,21-30 Batch: WG1082316-4							
Ethylbenzene	ND	0.020	0.010	ND	0.087	0.043	1
p/m-Xylene	ND	0.040	0.020	ND	0.174	0.087	1
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	ND	0.020	0.010	ND	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	ND	0.020	0.010	ND	0.087	0.043	1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
1,2,4-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	0.025	0.050	0.010	0.186	0.371	0.074	J 1
Naphthalene	0.029	0.050	0.025	0.152	0.262	0.131	J 1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
No Tentatively Identified Compounds					



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/19/18 14:17

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 08-14 Batch: WG1082320-4							
Chloromethane	ND	0.200	0.100	ND	0.413	0.207	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175	1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026	1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039	1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026	1
Ethanol	ND	5.00	0.157	ND	9.42	0.296	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101	1
Acetone	ND	1.00	0.500	ND	2.38	1.19	1
Trichlorofluoromethane	ND	0.050	0.025	ND	0.281	0.140	1
Isopropanol	ND	0.500	0.153	ND	1.23	0.376	1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063	1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196	1
Freon-113	ND	0.050	0.025	ND	0.383	0.192	1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036	1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095	1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737	1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072	1
Chloroform	ND	0.020	0.010	ND	0.098	0.049	1
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis

Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/19/18 14:17

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 08-14 Batch: WG1082320-4							
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Benzene	ND	0.100	0.050	ND	0.319	0.160	1
Carbon tetrachloride	ND	0.020	0.010	ND	0.126	0.063	1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046	1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180	1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126	1
Heptane	ND	0.200	0.032	ND	0.820	0.131	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Toluene	ND	0.050	0.025	ND	0.188	0.094	1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085	1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077	1
Tetrachloroethene	ND	0.020	0.010	ND	0.136	0.068	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046	1
Ethylbenzene	ND	0.020	0.010	ND	0.087	0.043	1
p/m-Xylene	ND	0.040	0.020	ND	0.174	0.087	1



Project Name: CUMMINGS BEVERLY

Lab Number: L1801543

Project Number: CUMMINGS BEVERLY

Report Date: 02/02/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 101,TO15-SIM

Analytical Date: 01/19/18 14:17

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 08-14 Batch: WG1082320-4							
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	ND	0.020	0.010	ND	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	ND	0.020	0.010	ND	0.087	0.043	1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
1,2,4-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	0.016	0.050	0.010	0.119	0.371	0.074	J 1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/20/18 13:57

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 15-20,31-33 Batch: WG1082531-4							
Dichlorodifluoromethane	ND	0.200	0.100	ND	0.989	0.494	1
Chloromethane	ND	0.200	0.100	ND	0.413	0.207	1
Freon-114	ND	0.050	0.025	ND	0.349	0.175	1
Vinyl chloride	ND	0.020	0.010	ND	0.051	0.026	1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022	1
Bromomethane	ND	0.020	0.010	ND	0.078	0.039	1
Chloroethane	ND	0.020	0.010	ND	0.053	0.026	1
Ethanol	ND	5.00	0.157	ND	9.42	0.296	1
Vinyl bromide	ND	0.200	0.023	ND	0.874	0.101	1
Acetone	ND	1.00	0.500	ND	2.38	1.19	1
Trichlorofluoromethane	ND	0.050	0.025	ND	0.281	0.140	1
Isopropanol	ND	0.500	0.153	ND	1.23	0.376	1
1,1-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
3-Chloropropene	ND	0.200	0.020	ND	0.626	0.063	1
Carbon disulfide	ND	0.200	0.063	ND	0.623	0.196	1
Freon-113	ND	0.050	0.025	ND	0.383	0.192	1
trans-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
1,1-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
Methyl tert butyl ether	ND	0.200	0.010	ND	0.721	0.036	1
Vinyl acetate	ND	0.200	0.027	ND	0.704	0.095	1
2-Butanone	ND	0.500	0.250	ND	1.47	0.737	1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.040	1
Ethyl Acetate	ND	0.500	0.020	ND	1.80	0.072	1
Chloroform	ND	0.020	0.010	ND	0.098	0.049	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/20/18 13:57

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 15-20,31-33 Batch: WG1082531-4							
Tetrahydrofuran	ND	0.200	0.037	ND	0.590	0.109	1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.041	1
n-Hexane	ND	0.200	0.033	ND	0.705	0.116	1
1,1,1-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Benzene	ND	0.100	0.050	ND	0.319	0.160	1
Carbon tetrachloride	ND	0.020	0.010	ND	0.126	0.063	1
Cyclohexane	ND	0.200	0.030	ND	0.688	0.103	1
1,2-Dichloropropane	ND	0.020	0.010	ND	0.092	0.046	1
Bromodichloromethane	ND	0.020	0.010	ND	0.134	0.067	1
1,4-Dioxane	ND	0.100	0.050	ND	0.360	0.180	1
Trichloroethene	ND	0.020	0.010	ND	0.107	0.054	1
2,2,4-Trimethylpentane	ND	0.200	0.027	ND	0.934	0.126	1
Heptane	ND	0.200	0.032	ND	0.820	0.131	1
cis-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
4-Methyl-2-pentanone	ND	0.500	0.250	ND	2.05	1.02	1
trans-1,3-Dichloropropene	ND	0.020	0.010	ND	0.091	0.045	1
1,1,2-Trichloroethane	ND	0.020	0.010	ND	0.109	0.055	1
Toluene	ND	0.050	0.025	ND	0.188	0.094	1
2-Hexanone	ND	0.200	0.030	ND	0.820	0.123	1
Dibromochloromethane	ND	0.020	0.010	ND	0.170	0.085	1
1,2-Dibromoethane	ND	0.020	0.010	ND	0.154	0.077	1
Tetrachloroethene	ND	0.020	0.010	ND	0.136	0.068	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
Chlorobenzene	ND	0.100	0.010	ND	0.461	0.046	1
Ethylbenzene	ND	0.020	0.010	ND	0.087	0.043	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 101,TO15-SIM
Analytical Date: 01/20/18 13:57

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
MCP Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 15-20,31-33 Batch: WG1082531-4							
p/m-Xylene	ND	0.040	0.020	ND	0.174	0.087	1
Bromoform	ND	0.020	0.010	ND	0.207	0.103	1
Styrene	ND	0.020	0.010	ND	0.085	0.043	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.010	ND	0.137	0.069	1
o-Xylene	ND	0.020	0.010	ND	0.087	0.043	1
1,3,5-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
1,2,4-Trimethylbenzene	ND	0.020	0.010	ND	0.098	0.049	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,4-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.060	1
1,2,4-Trichlorobenzene	0.014	0.050	0.010	0.104	0.371	0.074	J 1
Naphthalene	ND	0.050	0.025	ND	0.262	0.131	1
Hexachlorobutadiene	ND	0.050	0.025	ND	0.533	0.267	1



Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07,21-30 Batch: WG1082316-3								
Propylene	98		-		70-130	-		
Dichlorodifluoromethane	77		-		70-130	-		
Chloromethane	85		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	88		-		70-130	-		
Vinyl chloride	87		-		70-130	-		
1,3-Butadiene	97		-		70-130	-		
Bromomethane	86		-		70-130	-		
Chloroethane	87		-		70-130	-		
Ethyl Alcohol	95		-		70-130	-		
Vinyl bromide	91		-		70-130	-		
Acetone	108		-		50-150	-		
Trichlorofluoromethane	96		-		70-130	-		
iso-Propyl Alcohol	98		-		70-130	-		
1,1-Dichloroethene	92		-		70-130	-		
tert-Butyl Alcohol ¹	86		-		70-130	-		
Methylene chloride	94		-		70-130	-		
3-Chloropropene	106		-		70-130	-		
Carbon disulfide	91		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	92		-		70-130	-		
Halothane	120		-		70-130	-		
trans-1,2-Dichloroethene	94		-		70-130	-		
1,1-Dichloroethane	92		-		70-130	-		
Methyl tert butyl ether	96		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07,21-30 Batch: WG1082316-3								
Vinyl acetate	103		-		70-130	-		
2-Butanone	99		-		70-130	-		
cis-1,2-Dichloroethene	87		-		70-130	-		
Ethyl Acetate	97		-		70-130	-		
Chloroform	93		-		70-130	-		
Tetrahydrofuran	88		-		70-130	-		
1,2-Dichloroethane	92		-		70-130	-		
n-Hexane	94		-		70-130	-		
1,1,1-Trichloroethane	95		-		70-130	-		
Benzene	87		-		70-130	-		
Carbon tetrachloride	99		-		70-130	-		
Cyclohexane	95		-		70-130	-		
Dibromomethane ¹	82		-		70-130	-		
1,2-Dichloropropane	90		-		70-130	-		
Bromodichloromethane	104		-		70-130	-		
1,4-Dioxane	97		-		50-150	-		
Trichloroethene	91		-		70-130	-		
2,2,4-Trimethylpentane	99		-		70-130	-		
cis-1,3-Dichloropropene	95		-		70-130	-		
4-Methyl-2-pentanone	100		-		70-130	-		
trans-1,3-Dichloropropene	85		-		70-130	-		
1,1,2-Trichloroethane	94		-		70-130	-		
Toluene	86		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07,21-30 Batch: WG1082316-3								
2-Hexanone	100		-		70-130	-		
Dibromochloromethane	104		-		70-130	-		
1,2-Dibromoethane	92		-		70-130	-		
Tetrachloroethene	89		-		70-130	-		
Chlorobenzene	89		-		70-130	-		
Ethylbenzene	88		-		70-130	-		
p/m-Xylene	91		-		70-130	-		
Bromoform	103		-		70-130	-		
Styrene	91		-		70-130	-		
1,1,2,2-Tetrachloroethane	95		-		70-130	-		
o-Xylene	91		-		70-130	-		
1,2,3-Trichloropropane ¹	89		-		70-130	-		
Bromobenzene ¹	88		-		70-130	-		
1,3,5-Trimethylbenzene	97		-		70-130	-		
1,2,4-Trimethylbenzene	103		-		70-130	-		
Benzyl chloride	103		-		70-130	-		
1,3-Dichlorobenzene	102		-		70-130	-		
1,4-Dichlorobenzene	98		-		70-130	-		
1,2-Dichlorobenzene	100		-		70-130	-		
1,2,4-Trichlorobenzene	118		-		50-150	-		
Naphthalene	93		-		50-150	-		
1,2,3-Trichlorobenzene	102		-		70-130	-		
Hexachlorobutadiene	100		-		50-150	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	LCSD %Recovery	Qual	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 08-14 Batch: WG1082320-3								
Propylene	66		Q	-	70-130	-		
Dichlorodifluoromethane	66		Q	-	70-130	-		
Chloromethane	86			-	70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	105			-	70-130	-		
Vinyl chloride	97			-	70-130	-		
1,3-Butadiene	98			-	70-130	-		
Bromomethane	112			-	70-130	-		
Chloroethane	97			-	70-130	-		
Ethyl Alcohol	82			-	70-130	-		
Vinyl bromide	106			-	70-130	-		
Acetone	109			-	50-150	-		
Trichlorofluoromethane	124			-	70-130	-		
iso-Propyl Alcohol	107			-	70-130	-		
1,1-Dichloroethene	105			-	70-130	-		
tert-Butyl Alcohol ¹	85			-	70-130	-		
Methylene chloride	108			-	70-130	-		
3-Chloropropene	99			-	70-130	-		
Carbon disulfide	96			-	70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	112			-	70-130	-		
Halothane	114			-	70-130	-		
trans-1,2-Dichloroethene	90			-	70-130	-		
1,1-Dichloroethane	93			-	70-130	-		
Methyl tert butyl ether	78			-	70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 08-14 Batch: WG1082320-3								
Vinyl acetate	87		-		70-130	-		
2-Butanone	79		-		70-130	-		
cis-1,2-Dichloroethene	83		-		70-130	-		
Ethyl Acetate	94		-		70-130	-		
Chloroform	104		-		70-130	-		
Tetrahydrofuran	70		-		70-130	-		
1,2-Dichloroethane	96		-		70-130	-		
n-Hexane	76		-		70-130	-		
1,1,1-Trichloroethane	102		-		70-130	-		
Benzene	84		-		70-130	-		
Carbon tetrachloride	108		-		70-130	-		
Cyclohexane	74		-		70-130	-		
Dibromomethane ¹	85		-		70-130	-		
1,2-Dichloropropane	87		-		70-130	-		
Bromodichloromethane	100		-		70-130	-		
1,4-Dioxane	88		-		50-150	-		
Trichloroethene	94		-		70-130	-		
2,2,4-Trimethylpentane	83		-		70-130	-		
cis-1,3-Dichloropropene	83		-		70-130	-		
4-Methyl-2-pentanone	87		-		70-130	-		
trans-1,3-Dichloropropene	73		-		70-130	-		
1,1,2-Trichloroethane	100		-		70-130	-		
Toluene	88		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 08-14 Batch: WG1082320-3								
2-Hexanone	85		-		70-130	-		
Dibromochloromethane	114		-		70-130	-		
1,2-Dibromoethane	101		-		70-130	-		
Tetrachloroethene	105		-		70-130	-		
Chlorobenzene	102		-		70-130	-		
Ethylbenzene	89		-		70-130	-		
p/m-Xylene	96		-		70-130	-		
Bromoform	120		-		70-130	-		
Styrene	89		-		70-130	-		
1,1,2,2-Tetrachloroethane	106		-		70-130	-		
o-Xylene	96		-		70-130	-		
1,2,3-Trichloropropane ¹	93		-		70-130	-		
Bromobenzene ¹	87		-		70-130	-		
1,3,5-Trimethylbenzene	104		-		70-130	-		
1,2,4-Trimethylbenzene	109		-		70-130	-		
Benzyl chloride	99		-		70-130	-		
1,3-Dichlorobenzene	121		-		70-130	-		
1,4-Dichlorobenzene	117		-		70-130	-		
1,2-Dichlorobenzene	118		-		70-130	-		
1,2,4-Trichlorobenzene	133		-		50-150	-		
Naphthalene	110		-		50-150	-		
1,2,3-Trichlorobenzene	121		-		70-130	-		
Hexachlorobutadiene	131		-		50-150	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 15-20,31-33 Batch: WG1082531-3								
Propylene	68	Q	-	-	70-130	-	-	-
Dichlorodifluoromethane	88		-	-	70-130	-	-	-
Chloromethane	88		-	-	70-130	-	-	-
1,2-Dichloro-1,1,2,2-tetrafluoroethane	110		-	-	70-130	-	-	-
Vinyl chloride	99		-	-	70-130	-	-	-
1,3-Butadiene	100		-	-	70-130	-	-	-
Bromomethane	113		-	-	70-130	-	-	-
Chloroethane	98		-	-	70-130	-	-	-
Ethyl Alcohol	84		-	-	70-130	-	-	-
Vinyl bromide	108		-	-	70-130	-	-	-
Acetone	110		-	-	50-150	-	-	-
Trichlorofluoromethane	126		-	-	70-130	-	-	-
iso-Propyl Alcohol	108		-	-	70-130	-	-	-
1,1-Dichloroethene	108		-	-	70-130	-	-	-
tert-Butyl Alcohol ¹	83		-	-	70-130	-	-	-
Methylene chloride	109		-	-	70-130	-	-	-
3-Chloropropene	97		-	-	70-130	-	-	-
Carbon disulfide	97		-	-	70-130	-	-	-
1,1,2-Trichloro-1,2,2-Trifluoroethane	113		-	-	70-130	-	-	-
Halothane	117		-	-	70-130	-	-	-
trans-1,2-Dichloroethene	93		-	-	70-130	-	-	-
1,1-Dichloroethane	96		-	-	70-130	-	-	-
Methyl tert butyl ether	88		-	-	70-130	-	-	-

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 15-20,31-33 Batch: WG1082531-3								
Vinyl acetate	84		-		70-130	-		
2-Butanone	83		-		70-130	-		
cis-1,2-Dichloroethene	84		-		70-130	-		
Ethyl Acetate	96		-		70-130	-		
Chloroform	106		-		70-130	-		
Tetrahydrofuran	70		-		70-130	-		
1,2-Dichloroethane	100		-		70-130	-		
n-Hexane	74		-		70-130	-		
1,1,1-Trichloroethane	103		-		70-130	-		
Benzene	83		-		70-130	-		
Carbon tetrachloride	109		-		70-130	-		
Cyclohexane	71		-		70-130	-		
Dibromomethane ¹	85		-		70-130	-		
1,2-Dichloropropane	87		-		70-130	-		
Bromodichloromethane	100		-		70-130	-		
1,4-Dioxane	86		-		50-150	-		
Trichloroethene	93		-		70-130	-		
2,2,4-Trimethylpentane	80		-		70-130	-		
cis-1,3-Dichloropropene	82		-		70-130	-		
4-Methyl-2-pentanone	85		-		70-130	-		
trans-1,3-Dichloropropene	70		-		70-130	-		
1,1,2-Trichloroethane	99		-		70-130	-		
Toluene	91		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 15-20,31-33 Batch: WG1082531-3								
2-Hexanone	87		-		70-130	-		
Dibromochloromethane	118		-		70-130	-		
1,2-Dibromoethane	105		-		70-130	-		
Tetrachloroethene	109		-		70-130	-		
Chlorobenzene	102		-		70-130	-		
Ethylbenzene	87		-		70-130	-		
p/m-Xylene	95		-		70-130	-		
Bromoform	125		-		70-130	-		
Styrene	89		-		70-130	-		
1,1,2,2-Tetrachloroethane	109		-		70-130	-		
o-Xylene	99		-		70-130	-		
1,2,3-Trichloropropane ¹	97		-		70-130	-		
Bromobenzene ¹	87		-		70-130	-		
1,3,5-Trimethylbenzene	100		-		70-130	-		
1,2,4-Trimethylbenzene	102		-		70-130	-		
Benzyl chloride	94		-		70-130	-		
1,3-Dichlorobenzene	117		-		70-130	-		
1,4-Dichlorobenzene	119		-		70-130	-		
1,2-Dichlorobenzene	122		-		70-130	-		
1,2,4-Trichlorobenzene	135		-		50-150	-		
Naphthalene	113		-		50-150	-		
1,2,3-Trichlorobenzene	122		-		70-130	-		
Hexachlorobutadiene	135		-		50-150	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVER

Lab Number: L1801543
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07,21-30 QC Batch ID: WG1082316-5 QC Sample: L1801543-03 Client ID: S-171X.3						
Propylene	0.074J	0.074J	ppbV	NC		25
Dichlorodifluoromethane	0.360	0.333	ppbV	8		25
Chloromethane	0.490	0.494	ppbV	1		25
Freon-114	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	16.9	16.9	ppbV	0		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	3.03	3.03	ppbV	0		25
Trichlorofluoromethane	0.215	0.218	ppbV	1		25
Isopropanol	2.51	2.50	ppbV	0		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
Methylene chloride	1.37	1.38	ppbV	1		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
Freon-113	0.067	0.068	ppbV	1		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVER

Lab Number: L1801543
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07,21-30 QC Batch ID: WG1082316-5 QC Sample: L1801543-03 Client ID: S-171X.3						
Vinyl acetate	ND	ND	ppbV	NC		25
2-Butanone	ND	ND	ppbV	NC		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
Ethyl Acetate	0.037J	0.038J	ppbV	NC		25
Chloroform	0.042	0.043	ppbV	2		25
Tetrahydrofuran	ND	ND	ppbV	NC		25
1,2-Dichloroethane	0.016J	0.016J	ppbV	NC		25
n-Hexane	0.060J	0.060J	ppbV	NC		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Benzene	0.110	0.111	ppbV	1		25
Carbon tetrachloride	0.080	0.081	ppbV	1		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
Trichloroethene	ND	ND	ppbV	NC		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	ND	ND	ppbV	NC		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVER

Lab Number: L1801543
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07,21-30 QC Batch ID: WG1082316-5 QC Sample: L1801543-03 Client ID: S-171X.3						
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
Toluene	0.105	0.103	ppbV	2		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Tetrachloroethene	ND	ND	ppbV	NC		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	0.013J	0.013J	ppbV	NC		25
p/m-Xylene	0.027J	0.027J	ppbV	NC		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	0.025	0.025	ppbV	0		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	0.010J	0.011J	ppbV	NC		25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC		25
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	0.010J	ND	ppbV	NC		25
Naphthalene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVER

Lab Number: L1801543
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-07,21-30 QC Batch ID: WG1082316-5 QC Sample: L1801543-03 Client ID: S-171X.3						
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVER

Lab Number: L1801543
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 15-20,31-33 QC Batch ID: WG1082531-5 QC Sample: L1801543-17 Client ID: SV-10						
Propylene	ND	ND	ppbV	NC		25
Dichlorodifluoromethane	0.338	0.284	ppbV	17		25
Chloromethane	0.166J	0.181J	ppbV	NC		25
Freon-114	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	0.012J	ND	ppbV	NC		25
Ethanol	2.39J	2.66J	ppbV	NC		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	3.31	3.65	ppbV	10		25
Trichlorofluoromethane	0.287	0.315	ppbV	9		25
Isopropanol	1.75	1.96	ppbV	11		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	0.074J	0.081J	ppbV	NC		25
Freon-113	0.084	0.091	ppbV	8		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	0.198	0.221	ppbV	11		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVER

Lab Number: L1801543
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 15-20,31-33 QC Batch ID: WG1082531-5 QC Sample: L1801543-17 Client ID: SV-10						
Vinyl acetate	ND	ND	ppbV	NC		25
2-Butanone	0.604	0.732	ppbV	19		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
Ethyl Acetate	0.025J	0.031J	ppbV	NC		25
Chloroform	2.21	2.41	ppbV	9		25
Tetrahydrofuran	0.130J	0.147J	ppbV	NC		25
1,2-Dichloroethane	ND	0.011J	ppbV	NC		25
n-Hexane	ND	ND	ppbV	NC		25
1,1,1-Trichloroethane	0.543	0.637	ppbV	16		25
Benzene	0.069J	0.084J	ppbV	NC		25
Carbon tetrachloride	0.081	0.099	ppbV	20		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	0.013J	0.014J	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
Trichloroethene	0.029	0.033	ppbV	13		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	ND	ND	ppbV	NC		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	0.014J	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVER

Lab Number: L1801543
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 15-20,31-33 QC Batch ID: WG1082531-5 QC Sample: L1801543-17 Client ID: SV-10						
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
Toluene	0.239	0.238	ppbV	0		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Tetrachloroethene	0.086	0.088	ppbV	2		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	0.064	0.063	ppbV	2		25
p/m-Xylene	0.199	0.200	ppbV	1		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	0.463	0.465	ppbV	0		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	0.077	0.075	ppbV	3		25
1,3,5-Trimethylbenzene	0.021	0.020	ppbV	5		25
1,2,4-Trimethylbenzene	0.096	0.096	ppbV	0		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Naphthalene	0.149	0.154	ppbV	3		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVER

Lab Number: L1801543
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
MCP Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 15-20,31-33 QC Batch ID: WG1082531-5 QC Sample: L1801543-17 Client ID: SV-10						
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-01	Date Collected:	01/14/18 10:08
Client ID:	S-171X.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 16:35		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	22		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	88		50-200
Bromoform	93		50-200
Chlorobenzene-d5	89		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-02	Date Collected:	01/14/18 10:09
Client ID:	S-171X.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 17:59		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	24%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	200		ug/m3	10	10.	1
Toluene	1.4		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	61		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	92		50-200
Bromoform	96		50-200
Chlorobenzene-d5	88		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-03	Date Collected:	01/14/18 10:10
Client ID:	S-171X.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 18:34		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	12		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	85		50-200
Bromoform	91		50-200
Chlorobenzene-d5	81		50-200

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-04	Date Collected:	01/14/18 10:10
Client ID:	DUPLICATE-IA-2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 19:43		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	83		50-200
Bromoform	91		50-200
Chlorobenzene-d5	78		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-05	Date Collected:	01/14/18 10:20
Client ID:	S-1100.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 20:18		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	120		ug/m3	10	10.	1
Toluene	32		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	220		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	83		50-200
Bromoform	91		50-200
Chlorobenzene-d5	84		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-06	Date Collected:	01/14/18 10:23
Client ID:	S-1100.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 20:52		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	92		ug/m3	10	10.	1
Toluene	19		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	51		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	84		50-200
Bromoform	92		50-200
Chlorobenzene-d5	82		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-07	Date Collected:	01/14/18 10:22
Client ID:	S-1100.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 21:27		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	110		ug/m3	10	10.	1
Toluene	23		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	55		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	85		50-200
Bromoform	95		50-200
Chlorobenzene-d5	86		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-08	Date Collected:	01/14/18 11:58
Client ID:	SV-1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 21:14		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	22%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	23		ug/m3	10	10.	1
Toluene	1.1		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	1.5		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	220		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	61		50-200
Bromochloromethane	84		50-200
Chlorobenzene-d5	78		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-09	Date Collected:	01/14/18 13:50
Client ID:	SV-11	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 21:47		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	27		ug/m3	10	10.	1
Toluene	1.2		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	170		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	75		50-200
Bromoform	88		50-200
Chlorobenzene-d5	83		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-10	Date Collected:	01/14/18 15:29
Client ID:	SV-8	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 22:19		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	50		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	200		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	77		50-200
Bromoform	90		50-200
Chlorobenzene-d5	78		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-11	Date Collected:	01/14/18 16:15
Client ID:	SV-9	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 22:52		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	68		ug/m3	10	10.	1
Toluene	1.2		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	180		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	75		50-200
Bromoform	87		50-200
Chlorobenzene-d5	84		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-12	Date Collected:	01/14/18 17:21
Client ID:	SV-5	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 23:24		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	40		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	200		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	70		50-200
Bromoform	87		50-200
Chlorobenzene-d5	84		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-13	Date Collected:	01/14/18 17:21
Client ID:	DUPLICATE1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 23:57		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	21		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	220		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	74		50-200
Bromoform	87		50-200
Chlorobenzene-d5	80		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-14	Date Collected:	01/14/18 13:02
Client ID:	SV-2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 00:29		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	10		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	1900		ug/m3	10	10.	1
Toluene	3.5		ug/m3	0.90	0.90	1
Ethylbenzene	1.2		ug/m3	0.90	0.90	1
p/m-Xylene	2.4		ug/m3	0.90	0.90	1
o-Xylene	1.5		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	710		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	84		50-200
Bromochloromethane	91		50-200
Chlorobenzene-d5	88		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-15	Date Collected:	01/14/18 14:00
Client ID:	SV-13	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 20:08		
Analyst:	MB		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	26		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	120		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	74		50-200
Bromochloromethane	91		50-200
Chlorobenzene-d5	83		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-16	Date Collected:	01/14/18 14:42
Client ID:	SV-12	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 20:41		
Analyst:	MB		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	53		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	240		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	71		50-200
Bromoform	89		50-200
Chlorobenzene-d5	88		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-17	Date Collected:	01/14/18 15:38
Client ID:	SV-10	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 21:13		
Analyst:	MB		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	170		ug/m3	10	10.	1
Toluene	0.91		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	380		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	76		50-200
Bromoform	92		50-200
Chlorobenzene-d5	90		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-18	Date Collected:	01/14/18 16:50
Client ID:	SV-7	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 22:18		
Analyst:	MB		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	31%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	67		ug/m3	10	10.	1
Toluene	1.4		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	75		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	76		50-200
Bromoform	93		50-200
Chlorobenzene-d5	88		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-19	Date Collected:	01/14/18 17:16
Client ID:	SV-6	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 22:51		
Analyst:	MB		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	1.2		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	190		ug/m3	10	10.	1
Toluene	12		ug/m3	0.90	0.90	1
Ethylbenzene	1.2		ug/m3	0.90	0.90	1
p/m-Xylene	3.0		ug/m3	0.90	0.90	1
o-Xylene	1.4		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	330		ug/m3	10	10.	1
C9-C10 Aromatics Total	23		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	69		50-200
Bromoform	86		50-200
Chlorobenzene-d5	94		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-20	Date Collected:	01/14/18 17:28
Client ID:	SV-4	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 23:23		
Analyst:	MB		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	39		ug/m3	10	10.	1
Toluene	1.1		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	0.97		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	130		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	78		50-200
Bromochloromethane	96		50-200
Chlorobenzene-d5	92		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-21	Date Collected:	01/14/18 08:38
Client ID:	S-149J.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 22:01		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	37		ug/m3	10	10.	1
Toluene	1.3		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	16		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	85		50-200
Bromoform	91		50-200
Chlorobenzene-d5	84		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-22	Date Collected:	01/14/18 08:41
Client ID:	S-149J.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 22:36		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	107%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	49		ug/m3	10	10.	1
Toluene	1.4		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	13		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	81		50-200
Bromoform	89		50-200
Chlorobenzene-d5	84		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-23	Date Collected:	01/14/18 08:40
Client ID:	S-149J.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 23:10		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	43%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	40		ug/m3	10	10.	1
Toluene	0.98		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	16		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	86		50-200
Bromoform	93		50-200
Chlorobenzene-d5	84		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-24	Date Collected:	01/14/18 08:55
Client ID:	S-157J.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/19/18 23:45		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	100		ug/m3	10	10.	1
Toluene	4.0		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	59		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	80		50-200
Bromochloromethane	91		50-200
Chlorobenzene-d5	80		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-25	Date Collected:	01/14/18 09:00
Client ID:	S-157J.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 00:20		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	59%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	98		ug/m3	10	10.	1
Toluene	3.5		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	56		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	79		50-200
Bromoform	86		50-200
Chlorobenzene-d5	78		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-26	Date Collected:	01/14/18 08:57
Client ID:	S-157J.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 00:54		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	22%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	92		ug/m3	10	10.	1
Toluene	3.8		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	61		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	82		50-200
Bromoform	88		50-200
Chlorobenzene-d5	82		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-27	Date Collected:	01/14/18 09:15
Client ID:	S-135C.3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 01:30		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	260		ug/m3	10	10.	1
Toluene	11		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	1.6		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	3.0		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	90		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	80		50-200
Bromochloromethane	87		50-200
Chlorobenzene-d5	84		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-28	Date Collected:	01/14/18 09:15
Client ID:	DUPLICATE-IA-1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 02:05		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	230		ug/m3	10	10.	1
Toluene	11		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	1.6		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	3.2		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	88		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	83		50-200
Bromoform	90		50-200
Chlorobenzene-d5	84		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-29	Date Collected:	01/14/18 09:16
Client ID:	S-135C.2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 02:40		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	260		ug/m3	10	10.	1
Toluene	13		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	1.8		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	3.0		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	89		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	85		50-200
Bromoform	94		50-200
Chlorobenzene-d5	87		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-30	Date Collected:	01/14/18 09:17
Client ID:	S-135C.1	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 03:15		
Analyst:	RY		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 6 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	290		ug/m3	10	10.	1
Toluene	16		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	2.1		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	1.6		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	60		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	83		50-200
Bromoform	91		50-200
Chlorobenzene-d5	82		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-31	Date Collected:	01/15/18 20:50
Client ID:	SG-3	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/20/18 23:56		
Analyst:	MB		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	21		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	82		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	68		50-200
Bromoform	86		50-200
Chlorobenzene-d5	87		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-32	Date Collected:	01/15/18 20:50
Client ID:	DUPLICATE2	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/21/18 00:29		
Analyst:	MB		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	24		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	99		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	90		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	67		50-200
Bromoform	84		50-200
Chlorobenzene-d5	82		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

SAMPLE RESULTS

Lab ID:	L1801543-33	Date Collected:	01/15/18 20:45
Client ID:	SG-4	Date Received:	01/16/18
Sample Location:	BEVERLY, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil_Vapor		
Analytical Method:	96,APH		
Analytical Date:	01/21/18 01:01		
Analyst:	MB		

Quality Control Information

Sample Type:	Composite
Sample Container Type:	Canister - 2.7 Liter
Sampling Flow Controller:	Mechanical
Sampling Zone:	Unknown
Sampling Flow Meter RPD of pre & post-sampling calibration check:	<=20%
Were all QA/QC procedures REQUIRED by the method followed?	Yes
Were all performance/acceptance standards for the required procedures achieved?	Yes
Were significant modifications made to the method as specified in Sect 11.1.2?	No

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	1.2		ug/m3	0.70	0.70	1
Benzene	2.5		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	1100		ug/m3	10	10.	1
Toluene	2.9		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	2.0		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	4.0		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	2200		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	81		50-200
Bromoform	92		50-200
Chlorobenzene-d5	100		50-200



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 96,APH
Analytical Date: 01/19/18 15:15
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbons in Air - Mansfield Lab for sample(s):	01-07,21-30			Batch:	WG1082315-4
1,3-Butadiene	ND		ug/m3	0.50	0.50
Methyl tert butyl ether	ND		ug/m3	0.70	0.70
Benzene	ND		ug/m3	0.60	0.60
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.
Toluene	ND		ug/m3	0.90	0.90
Ethylbenzene	ND		ug/m3	0.90	0.90
p/m-Xylene	ND		ug/m3	0.90	0.90
o-Xylene	ND		ug/m3	0.90	0.90
Naphthalene	ND		ug/m3	1.1	1.1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.
C9-C10 Aromatics Total	ND		ug/m3	10	10.



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 96,APH
Analytical Date: 01/19/18 14:17
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbons in Air - Mansfield Lab for sample(s): 08-14				Batch:	WG1082318-4
1,3-Butadiene	ND		ug/m3	0.50	0.50
Methyl tert butyl ether	ND		ug/m3	0.70	0.70
Benzene	ND		ug/m3	0.60	0.60
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.
Toluene	ND		ug/m3	0.90	0.90
Ethylbenzene	ND		ug/m3	0.90	0.90
p/m-Xylene	ND		ug/m3	0.90	0.90
o-Xylene	ND		ug/m3	0.90	0.90
Naphthalene	ND		ug/m3	1.1	1.1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.
C9-C10 Aromatics Total	ND		ug/m3	10	10.



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 96,APH
Analytical Date: 01/20/18 13:57
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbons in Air - Mansfield Lab for sample(s):	15-20,31-33			Batch:	WG1082530-4
1,3-Butadiene	ND		ug/m3	0.50	0.50
Methyl tert butyl ether	ND		ug/m3	0.70	0.70
Benzene	ND		ug/m3	0.60	0.60
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.
Toluene	ND		ug/m3	0.90	0.90
Ethylbenzene	ND		ug/m3	0.90	0.90
p/m-Xylene	ND		ug/m3	0.90	0.90
o-Xylene	ND		ug/m3	0.90	0.90
Naphthalene	ND		ug/m3	1.1	1.1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.
C9-C10 Aromatics Total	ND		ug/m3	10	10.



Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbons in Air - Mansfield Lab Associated sample(s): 01-07,21-30 Batch: WG1082315-3								
1,3-Butadiene	123		-		70-130	-		
Methyl tert butyl ether	106		-		70-130	-		
Benzene	102		-		70-130	-		
C5-C8 Aliphatics, Adjusted	123		-		70-130	-		
Toluene	84		-		70-130	-		
Ethylbenzene	84		-		70-130	-		
p/m-Xylene	86		-		70-130	-		
o-Xylene	91		-		70-130	-		
Naphthalene	104		-		50-150	-		
C9-C12 Aliphatics, Adjusted	104		-		70-130	-		
C9-C10 Aromatics Total	75		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbons in Air - Mansfield Lab Associated sample(s): 08-14 Batch: WG1082318-3								
1,3-Butadiene	87		-		70-130	-		
Methyl tert butyl ether	87		-		70-130	-		
Benzene	91		-		70-130	-		
C5-C8 Aliphatics, Adjusted	92		-		70-130	-		
Toluene	95		-		70-130	-		
Ethylbenzene	95		-		70-130	-		
p/m-Xylene	96		-		70-130	-		
o-Xylene	101		-		70-130	-		
Naphthalene	131		-		50-150	-		
C9-C12 Aliphatics, Adjusted	99		-		70-130	-		
C9-C10 Aromatics Total	90		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbons in Air - Mansfield Lab Associated sample(s): 15-20,31-33 Batch: WG1082530-3								
1,3-Butadiene	95		-		70-130	-		
Methyl tert butyl ether	88		-		70-130	-		
Benzene	93		-		70-130	-		
C5-C8 Aliphatics, Adjusted	93		-		70-130	-		
Toluene	100		-		70-130	-		
Ethylbenzene	99		-		70-130	-		
p/m-Xylene	101		-		70-130	-		
o-Xylene	104		-		70-130	-		
Naphthalene	137		-		50-150	-		
C9-C12 Aliphatics, Adjusted	103		-		70-130	-		
C9-C10 Aromatics Total	92		-		70-130	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVER

Lab Number: L1801543
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbons in Air - Mansfield Lab	Associated sample(s): 01-07,21-30	QC Batch ID: WG1082315-5	QC Sample: L1801543-03	Client ID: S-171X.3		
1,3-Butadiene	ND	ND	ug/m3	NC		30
Methyl tert butyl ether	ND	ND	ug/m3	NC		30
Benzene	ND	ND	ug/m3	NC		30
C5-C8 Aliphatics, Adjusted	ND	ND	ug/m3	NC		30
Toluene	ND	ND	ug/m3	NC		30
Ethylbenzene	ND	ND	ug/m3	NC		30
p/m-Xylene	ND	ND	ug/m3	NC		30
o-Xylene	ND	ND	ug/m3	NC		30
Naphthalene	ND	ND	ug/m3	NC		30
C9-C12 Aliphatics, Adjusted	12	12	ug/m3	0		30
C9-C10 Aromatics Total	ND	ND	ug/m3	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVER

Lab Number: L1801543
Report Date: 02/02/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbons in Air - Mansfield Lab Associated sample(s): 15-20,31-33 QC Batch ID: WG1082530-5 QC Sample: L1801543-17 Client ID: SV-10						
1,3-Butadiene	ND	ND	ug/m3	NC		30
Methyl tert butyl ether	ND	ND	ug/m3	NC		30
Benzene	ND	ND	ug/m3	NC		30
C5-C8 Aliphatics, Adjusted	170	210	ug/m3	21		30
Toluene	0.91	0.95	ug/m3	4		30
Ethylbenzene	ND	ND	ug/m3	NC		30
p/m-Xylene	ND	ND	ug/m3	NC		30
o-Xylene	ND	ND	ug/m3	NC		30
Naphthalene	ND	ND	ug/m3	NC		30
C9-C12 Aliphatics, Adjusted	380	400	ug/m3	5		30
C9-C10 Aromatics Total	ND	ND	ug/m3	NC		30

Project Name: CUMMINGS BEVERLY

Lab Number: L1801543

Project Number: CUMMINGS BEVERLY

Report Date: 02/02/18

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1801543-01	S-171X.2	0200	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	3.4	3
L1801543-01	S-171X.2	2113	6.0L Can	01/11/18	257095	L1800091-02	Pass	-30.0	-6.2	-	-	-	-
L1801543-02	S-171X.1	0729	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	2.6	24
L1801543-02	S-171X.1	1666	6.0L Can	01/11/18	257095	L1800091-02	Pass	-30.0	-12.4	-	-	-	-
L1801543-03	S-171X.3	0834	FLOW 5	01/11/18	257095		-	-	-	Pass	3.3	3.4	3
L1801543-03	S-171X.3	1711	6.0L Can	01/11/18	257095	L1800091-02	Pass	-29.9	-6.6	-	-	-	-
L1801543-04	DUPLICATE-IA-2	0172	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	3.7	11
L1801543-04	DUPLICATE-IA-2	2068	6.0L Can	01/11/18	257095	L1800091-01	Pass	-30.0	-6.3	-	-	-	-
L1801543-05	S-1100.3	0186	Flow 3	01/11/18	257095		-	-	-	Pass	3.3	3.3	0
L1801543-05	S-1100.3	2482	6.0L Can	01/11/18	257095	L1800091-03	Pass	-30.0	-6.5	-	-	-	-
L1801543-06	S-1100.2	0989	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	3.2	3
L1801543-06	S-1100.2	1514	6.0L Can	01/11/18	257095	L1800091-01	Pass	-30.0	-10.1	-	-	-	-
L1801543-07	S-1100.1	0286	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	3.4	3
L1801543-07	S-1100.1	611	6.0L Can	01/11/18	257095	L1800091-03	Pass	-30.0	-0.7	-	-	-	-
L1801543-08	SV-1	0049	#90 SV	01/11/18	257095		Pass	-	-	-	70	87	22

Project Name: CUMMINGS BEVERLY

Lab Number: L1801543

Project Number: CUMMINGS BEVERLY

Report Date: 02/02/18

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1801543-08	SV-1	450	2.7L Can	01/11/18	257095	L1800504-02	Pass	-30.0	-11.1	-	-	-	-
L1801543-09	SV-11	0093	Flow 2	01/11/18	257095		Pass	-	-	-	71	80	12
L1801543-09	SV-11	2311	2.7L Can	01/11/18	257095	L1800504-02	Pass	-30.0	-9.6	-	-	-	-
L1801543-10	SV-8	01007	Flow 2	01/11/18	257095		Pass	-	-	-	72	82	13
L1801543-10	SV-8	1747	2.7L Can	01/11/18	257095	L1800504-02	Pass	-30.0	-5.3	-	-	-	-
L1801543-11	SV-9	01008	Flow 2	01/11/18	257095		Pass	-	-	-	72	80	11
L1801543-11	SV-9	486	2.7L Can	01/11/18	257095	L1800504-02	Pass	-30.0	-7.3	-	-	-	-
L1801543-12	SV-5	0269	Flow 2	01/11/18	257095		Pass	-	-	-	72	62	15
L1801543-12	SV-5	446	2.7L Can	01/11/18	257095	L1800402-01	Pass	-30.0	-6.7	-	-	-	-
L1801543-13	DUPLICATE1	01015	Flow 2	01/11/18	257095		Pass	-	-	-	72	80	11
L1801543-13	DUPLICATE1	1727	2.7L Can	01/11/18	257095	L1800504-02	Pass	-30.0	-5.0	-	-	-	-
L1801543-14	SV-2	01016	Flow 2	01/11/18	257095		Pass	-	-	-	72	80	11
L1801543-14	SV-2	180	2.7L Can	01/11/18	257095	L1800402-01	Pass	-30.0	-5.3	-	-	-	-
L1801543-15	SV-13	01011	Flow 2	01/11/18	257095		Pass	-	-	-	72	79	9
L1801543-15	SV-13	362	2.7L Can	01/11/18	257095	L1800504-02	Pass	-30.0	-5.2	-	-	-	-

Project Name: CUMMINGS BEVERLY

Lab Number: L1801543

Project Number: CUMMINGS BEVERLY

Report Date: 02/02/18

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1801543-16	SV-12	0955	Flow 1	01/11/18	257095		Pass	-	-	-	72	73	1
L1801543-16	SV-12	2437	2.7L Can	01/11/18	257095	L1800504-02	Pass	-30.0	-5.3	-	-	-	-
L1801543-17	SV-10	01009	Flow 2	01/11/18	257095		Pass	-	-	-	72	80	11
L1801543-17	SV-10	2177	2.7L Can	01/11/18	257095	L1800402-01	Pass	-30.0	-7.4	-	-	-	-
L1801543-18	SV-7	0113	Flow 1	01/11/18	257095		Pass	-	-	-	71	97	31
L1801543-18	SV-7	2027	2.7L Can	01/11/18	257095	L1800504-02	Pass	-30.0	-5.3	-	-	-	-
L1801543-19	SV-6	0625	#90 SV	01/11/18	257095		Pass	-	-	-	72	82	13
L1801543-19	SV-6	468	2.7L Can	01/11/18	257095	L1800402-01	Pass	-30.0	-7.8	-	-	-	-
L1801543-20	SV-4	1805	2.7L CAN	01/11/18	257095	L1800504-02	Pass	-30.0	-3.7	-	-	-	-
L1801543-21	S-149J.1	0315	Flow 5	01/11/18	257095		-	-	-	Pass	3.2	2.9	10
L1801543-21	S-149J.1	2487	6.0L Can	01/11/18	257095	L1800091-02	Pass	-30.0	+0.4	-	-	-	-
L1801543-22	S-149J.2	0699	flow 5	01/11/18	257095		-	-	-	Pass	3.3	10.9	107
L1801543-22	S-149J.2	919	6.0L Can	01/11/18	257095	L1800091-01	Pass	-28.4	-6.6	-	-	-	-
L1801543-23	S-149J.3	0089	Flow 5	01/11/18	257095		-	-	-	Pass	3.1	4.8	43
L1801543-23	S-149J.3	2098	6.0L Can	01/11/18	257095	L1800091-01	Pass	-30.0	+0.4	-	-	-	-

Project Name: CUMMINGS BEVERLY

Lab Number: L1801543

Project Number: CUMMINGS BEVERLY

Report Date: 02/02/18

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1801543-24	S-157J.3	0331	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	3.5	6
L1801543-24	S-157J.3	2124	6.0L Can	01/11/18	257095	L1800091-01	Pass	-30.0	-6.6	-	-	-	-
L1801543-25	S-157J.1	0496	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	1.8	59
L1801543-25	S-157J.1	1640	6.0L Can	01/11/18	257095	L1800091-01	Pass	-30.0	-12.3	-	-	-	-
L1801543-26	S-157J.2	0762	Flow 5	01/11/18	257095		-	-	-	Pass	3.2	4.0	22
L1801543-26	S-157J.2	1818	6.0L Can	01/11/18	257095	L1800091-01	Pass	-30.0	-5.6	-	-	-	-
L1801543-27	S-135C.3	0133	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	3.1	6
L1801543-27	S-135C.3	1650	6.0L Can	01/11/18	257095	L1800091-02	Pass	-30.0	-8.5	-	-	-	-
L1801543-28	DUPLICATE-IA-1	0122	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	3.4	3
L1801543-28	DUPLICATE-IA-1	940	6.0L Can	01/11/18	257095	L1800091-02	Pass	-30.0	-7.0	-	-	-	-
L1801543-29	S-135C.2	0560	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	7.3	75
L1801543-29	S-135C.2	1588	6.0L Can	01/11/18	257095	L1800091-02	Pass	-30.0	+0.4	-	-	-	-
L1801543-30	S-135C.1	0397	Flow 5	01/11/18	257095		-	-	-	Pass	3.3	3.4	3
L1801543-30	S-135C.1	784	6.0L Can	01/11/18	257095	L1800091-02	Pass	-30.0	-6.2	-	-	-	-
L1801543-31	SG-3	0381	Flow 1	01/11/18	257095		Pass	-	-	-	72	87	19

Project Name: CUMMINGS BEVERLY

Serial_No:02021816:33

Project Number: CUMMINGS BEVERLY

Lab Number: L1801543

Report Date: 02/02/18

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1801543-31	SG-3	473	2.7L Can	01/11/18	257095	L1800402-01	Pass	-30.0	-8.1	-	-	-	-
L1801543-32	DUPLICATE2	0360	Flow 1	01/11/18	257095		Pass	-	-	-	72	87	19
L1801543-32	DUPLICATE2	470	2.7L Can	01/11/18	257095	L1800402-01	Pass	-30.0	-7.8	-	-	-	-
L1801543-33	SG-4	01014	Flow 2	01/11/18	257095		Pass	-	-	-	72	79	9
L1801543-33	SG-4	192	2.7L Can	01/11/18	257095	L1800504-02	Pass	-30.0	-8.3	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-01
 Client ID: CAN 2104 SHELF 42
 Sample Location:
 Sample Depth:
 Matrix: Air
 Analytical Method: 48,TO-15
 Analytical Date: 01/03/18 19:28
 Analyst: MB

Date Collected: 01/02/18 16:00
 Date Received: 01/03/18
 Field Prep: Not Specified

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
Chlorodifluoromethane	ND	0.200	0.063	ND	0.707	0.221	1
Propylene	ND	0.500	0.093	ND	0.861	0.160	1
Propane	ND	0.500	0.114	ND	0.902	0.206	1
Dichlorodifluoromethane	ND	0.200	0.047	ND	0.989	0.230	1
Chloromethane	ND	0.200	0.096	ND	0.413	0.198	1
Freon-114	ND	0.200	0.042	ND	1.40	0.293	1
Methanol	ND	5.00	0.736	ND	6.55	0.964	1
Vinyl chloride	ND	0.200	0.039	ND	0.511	0.101	1
1,3-Butadiene	ND	0.200	0.080	ND	0.442	0.177	1
Butane	ND	0.200	0.044	ND	0.475	0.105	1
Bromomethane	ND	0.200	0.070	ND	0.777	0.270	1
Chloroethane	ND	0.200	0.077	ND	0.528	0.202	1
Ethanol	ND	5.00	0.542	ND	9.42	1.02	1
Dichlorofluoromethane	ND	0.200	0.057	ND	0.842	0.241	1
Vinyl bromide	ND	0.200	0.070	ND	0.874	0.306	1
Acrolein	ND	0.500	0.114	ND	1.15	0.261	1
Acetone	ND	1.00	0.165	ND	2.38	0.392	1
Acetonitrile	ND	0.200	0.076	ND	0.336	0.128	1
Trichlorofluoromethane	ND	0.200	0.042	ND	1.12	0.234	1
Isopropanol	ND	0.500	0.084	ND	1.23	0.206	1
Acrylonitrile	ND	0.500	0.079	ND	1.09	0.171	1
Pentane	ND	0.200	0.048	ND	0.590	0.140	1
Ethyl ether	ND	0.200	0.059	ND	0.606	0.179	1
1,1-Dichloroethene	ND	0.200	0.057	ND	0.793	0.224	1
Tertiary butyl Alcohol	ND	0.500	0.060	ND	1.52	0.182	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-01 Date Collected: 01/02/18 16:00
 Client ID: CAN 2104 SHELF 42 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
Methylene chloride	ND	0.500	0.062	ND	1.74	0.216	1
3-Chloropropene	ND	0.200	0.081	ND	0.626	0.254	1
Carbon disulfide	ND	0.200	0.035	ND	0.623	0.107	1
Freon-113	ND	0.200	0.051	ND	1.53	0.392	1
trans-1,2-Dichloroethene	ND	0.200	0.074	ND	0.793	0.293	1
1,1-Dichloroethane	ND	0.200	0.077	ND	0.809	0.312	1
Methyl tert butyl ether	ND	0.200	0.045	ND	0.721	0.163	1
Vinyl acetate	ND	1.00	0.057	ND	3.52	0.200	1
2-Butanone	ND	0.500	0.052	ND	1.47	0.154	1
cis-1,2-Dichloroethene	ND	0.200	0.059	ND	0.793	0.233	1
Ethyl Acetate	ND	0.500	0.131	ND	1.80	0.472	1
Chloroform	ND	0.200	0.045	ND	0.977	0.221	1
Tetrahydrofuran	ND	0.500	0.061	ND	1.47	0.179	1
2,2-Dichloropropane	ND	0.200	0.058	ND	0.924	0.269	1
1,2-Dichloroethane	ND	0.200	0.055	ND	0.809	0.223	1
n-Hexane	ND	0.200	0.052	ND	0.705	0.183	1
Diisopropyl ether	ND	0.200	0.066	ND	0.836	0.274	1
tert-Butyl Ethyl Ether	ND	0.200	0.052	ND	0.836	0.215	1
1,1,1-Trichloroethane	ND	0.200	0.057	ND	1.09	0.311	1
1,1-Dichloropropene	ND	0.200	0.072	ND	0.908	0.325	1
Benzene	ND	0.200	0.054	ND	0.639	0.172	1
Carbon tetrachloride	ND	0.200	0.047	ND	1.26	0.296	1
Cyclohexane	ND	0.200	0.066	ND	0.688	0.226	1
tert-Amyl Methyl Ether	ND	0.200	0.080	ND	0.836	0.332	1
Dibromomethane	ND	0.200	0.048	ND	1.42	0.338	1
1,2-Dichloropropane	ND	0.200	0.070	ND	0.924	0.322	1
Bromodichloromethane	ND	0.200	0.066	ND	1.34	0.439	1
1,4-Dioxane	ND	0.200	0.078	ND	0.721	0.281	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-01 Date Collected: 01/02/18 16:00
 Client ID: CAN 2104 SHELF 42 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
Trichloroethene	ND	0.200	0.071	ND	1.07	0.382	1
2,2,4-Trimethylpentane	ND	0.200	0.066	ND	0.934	0.308	1
Methyl Methacrylate	ND	0.500	0.147	ND	2.05	0.602	1
Heptane	ND	0.200	0.055	ND	0.820	0.227	1
cis-1,3-Dichloropropene	ND	0.200	0.075	ND	0.908	0.338	1
4-Methyl-2-pentanone	ND	0.500	0.061	ND	2.05	0.249	1
trans-1,3-Dichloropropene	ND	0.200	0.069	ND	0.908	0.315	1
1,1,2-Trichloroethane	ND	0.200	0.067	ND	1.09	0.364	1
Toluene	ND	0.200	0.063	ND	0.754	0.237	1
1,3-Dichloropropane	ND	0.200	0.078	ND	0.924	0.359	1
2-Hexanone	ND	0.200	0.060	ND	0.820	0.248	1
Dibromochloromethane	ND	0.200	0.075	ND	1.70	0.636	1
1,2-Dibromoethane	ND	0.200	0.078	ND	1.54	0.599	1
Butyl acetate	ND	0.500	0.114	ND	2.38	0.542	1
Octane	ND	0.200	0.042	ND	0.934	0.197	1
Tetrachloroethene	ND	0.200	0.076	ND	1.36	0.514	1
1,1,1,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
Chlorobenzene	ND	0.200	0.079	ND	0.921	0.363	1
Ethylbenzene	ND	0.200	0.056	ND	0.869	0.241	1
p/m-Xylene	ND	0.400	0.139	ND	1.74	0.604	1
Bromoform	ND	0.200	0.052	ND	2.07	0.541	1
Styrene	ND	0.200	0.080	ND	0.852	0.340	1
1,1,2,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
o-Xylene	ND	0.200	0.063	ND	0.869	0.274	1
1,2,3-Trichloropropane	ND	0.200	0.077	ND	1.21	0.462	1
Nonane	ND	0.200	0.064	ND	1.05	0.338	1
Isopropylbenzene	ND	0.200	0.043	ND	0.983	0.211	1
Bromobenzene	ND	0.200	0.079	ND	0.793	0.313	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-01 Date Collected: 01/02/18 16:00
 Client ID: CAN 2104 SHELF 42 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
2-Chlorotoluene	ND	0.200	0.049	ND	1.04	0.252	1
n-Propylbenzene	ND	0.200	0.056	ND	0.983	0.275	1
4-Chlorotoluene	ND	0.200	0.076	ND	1.04	0.396	1
4-Ethyltoluene	ND	0.200	0.078	ND	0.983	0.381	1
1,3,5-Trimethylbenzene	ND	0.200	0.058	ND	0.983	0.287	1
tert-Butylbenzene	ND	0.200	0.040	ND	1.10	0.221	1
1,2,4-Trimethylbenzene	ND	0.200	0.069	ND	0.983	0.341	1
Decane	ND	0.200	0.048	ND	1.16	0.282	1
Benzyl chloride	ND	0.200	0.065	ND	1.04	0.334	1
1,3-Dichlorobenzene	ND	0.200	0.064	ND	1.20	0.383	1
1,4-Dichlorobenzene	ND	0.200	0.042	ND	1.20	0.251	1
sec-Butylbenzene	ND	0.200	0.073	ND	1.10	0.401	1
p-Isopropyltoluene	ND	0.200	0.061	ND	1.10	0.334	1
1,2-Dichlorobenzene	ND	0.200	0.061	ND	1.20	0.369	1
n-Butylbenzene	ND	0.200	0.064	ND	1.10	0.351	1
1,2-Dibromo-3-chloropropane	ND	0.200	0.074	ND	1.93	0.719	1
Undecane	ND	0.200	0.053	ND	1.28	0.338	1
Dodecane	ND	0.200	0.056	ND	1.39	0.393	1
1,2,4-Trichlorobenzene	ND	0.200	0.061	ND	1.48	0.454	1
Naphthalene	ND	0.200	0.043	ND	1.05	0.223	1
1,2,3-Trichlorobenzene	ND	0.200	0.043	ND	1.48	0.320	1
Hexachlorobutadiene	ND	0.200	0.073	ND	2.13	0.781	1

Results	Qualifier	Units	RDL	Dilution Factor
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Tentatively Identified Compounds

No Tentatively Identified Compounds



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-01 Date Collected: 01/02/18 16:00
 Client ID: CAN 2104 SHELF 42 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	83		60-140
Bromochloromethane	89		60-140
chlorobenzene-d5	81		60-140



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800091-01	Date Collected:	01/02/18 16:00
Client ID:	CAN 2104 SHELF 42	Date Received:	01/03/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15-SIM		
Analytical Date:	01/03/18 19:28		
Analyst:	MB		

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Dichlorodifluoromethane	ND	0.200	0.011	ND	0.989	0.055	1
Chloromethane	ND	0.200	0.048	ND	0.413	0.099	1
Freon-114	ND	0.050	0.012	ND	0.349	0.081	1
Vinyl chloride	ND	0.020	0.006	ND	0.051	0.015	1
1,3-Butadiene	ND	0.020	0.007	ND	0.044	0.016	1
Bromomethane	ND	0.020	0.008	ND	0.078	0.031	1
Chloroethane	ND	0.100	0.017	ND	0.264	0.045	1
Acetone	ND	1.00	0.366	ND	2.38	0.869	1
Trichlorofluoromethane	ND	0.050	0.011	ND	0.281	0.064	1
Acrylonitrile	ND	0.500	0.025	ND	1.09	0.054	1
1,1-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
Freon-113	ND	0.050	0.013	ND	0.383	0.097	1
Halothane	ND	0.050	0.008	ND	0.404	0.065	1
trans-1,2-Dichloroethene	ND	0.020	0.006	ND	0.079	0.024	1
1,1-Dichloroethane	ND	0.020	0.007	ND	0.081	0.028	1
Methyl tert butyl ether	ND	0.200	0.006	ND	0.721	0.022	1
2-Butanone	ND	0.500	0.016	ND	1.47	0.047	1
cis-1,2-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Chloroform	ND	0.020	0.005	ND	0.098	0.024	1
1,2-Dichloroethane	ND	0.020	0.005	ND	0.081	0.020	1
1,1,1-Trichloroethane	ND	0.020	0.006	ND	0.109	0.033	1
Benzene	ND	0.100	0.019	ND	0.319	0.061	1
Carbon tetrachloride	ND	0.020	0.007	ND	0.126	0.044	1
1,2-Dichloropropane	ND	0.020	0.008	ND	0.092	0.037	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-01 Date Collected: 01/02/18 16:00
 Client ID: CAN 2104 SHELF 42 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
Bromodichloromethane	ND	0.020	0.008	ND	0.134	0.054	1
1,4-Dioxane	ND	0.100	0.014	ND	0.360	0.051	1
Trichloroethene	ND	0.020	0.007	ND	0.107	0.038	1
cis-1,3-Dichloropropene	ND	0.020	0.006	ND	0.091	0.027	1
4-Methyl-2-pentanone	ND	0.500	0.005	ND	2.05	0.021	1
trans-1,3-Dichloropropene	ND	0.020	0.008	ND	0.091	0.036	1
1,1,2-Trichloroethane	ND	0.020	0.004	ND	0.109	0.022	1
Toluene	ND	0.050	0.006	ND	0.188	0.023	1
Dibromochloromethane	ND	0.020	0.008	ND	0.170	0.068	1
1,2-Dibromoethane	ND	0.020	0.008	ND	0.154	0.062	1
Tetrachloroethene	ND	0.020	0.008	ND	0.136	0.054	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.006	ND	0.137	0.041	1
Chlorobenzene	ND	0.100	0.007	ND	0.461	0.032	1
Ethylbenzene	ND	0.020	0.007	ND	0.087	0.030	1
p/m-Xylene	ND	0.040	0.007	ND	0.174	0.030	1
Bromoform	ND	0.020	0.015	ND	0.207	0.155	1
Styrene	ND	0.020	0.007	ND	0.085	0.030	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.007	ND	0.137	0.048	1
o-Xylene	ND	0.020	0.008	ND	0.087	0.035	1
Isopropylbenzene	ND	0.200	0.007	ND	0.983	0.034	1
4-Ethyltoluene	ND	0.020	0.010	ND	0.098	0.049	1
1,3,5-Trimethylbenzene	ND	0.020	0.005	ND	0.098	0.025	1
1,2,4-Trimethylbenzene	ND	0.020	0.007	ND	0.098	0.034	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
1,4-Dichlorobenzene	ND	0.020	0.008	ND	0.120	0.048	1
sec-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
p-Isopropyltoluene	ND	0.200	0.007	ND	1.10	0.038	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-01 Date Collected: 01/02/18 16:00
 Client ID: CAN 2104 SHELF 42 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air by SIM - Mansfield Lab							
1,2-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
n-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.008	ND	0.262	0.042	1
1,2,3-Trichlorobenzene	ND	0.050	0.019	ND	0.371	0.141	1
Hexachlorobutadiene	ND	0.050	0.007	ND	0.533	0.075	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	80		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	82		60-140



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800091-02	Date Collected:	01/02/18 16:00
Client ID:	CAN 1787 SHELF 43	Date Received:	01/03/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15		
Analytical Date:	01/03/18 20:12		
Analyst:	MB		

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
Chlorodifluoromethane	ND	0.200	0.063	ND	0.707	0.221	1
Propylene	ND	0.500	0.093	ND	0.861	0.160	1
Propane	ND	0.500	0.114	ND	0.902	0.206	1
Dichlorodifluoromethane	ND	0.200	0.047	ND	0.989	0.230	1
Chloromethane	ND	0.200	0.096	ND	0.413	0.198	1
Freon-114	ND	0.200	0.042	ND	1.40	0.293	1
Methanol	ND	5.00	0.736	ND	6.55	0.964	1
Vinyl chloride	ND	0.200	0.039	ND	0.511	0.101	1
1,3-Butadiene	ND	0.200	0.080	ND	0.442	0.177	1
Butane	ND	0.200	0.044	ND	0.475	0.105	1
Bromomethane	ND	0.200	0.070	ND	0.777	0.270	1
Chloroethane	ND	0.200	0.077	ND	0.528	0.202	1
Ethanol	ND	5.00	0.542	ND	9.42	1.02	1
Dichlorofluoromethane	ND	0.200	0.057	ND	0.842	0.241	1
Vinyl bromide	ND	0.200	0.070	ND	0.874	0.306	1
Acrolein	ND	0.500	0.114	ND	1.15	0.261	1
Acetone	ND	1.00	0.165	ND	2.38	0.392	1
Acetonitrile	ND	0.200	0.076	ND	0.336	0.128	1
Trichlorofluoromethane	ND	0.200	0.042	ND	1.12	0.234	1
Isopropanol	ND	0.500	0.084	ND	1.23	0.206	1
Acrylonitrile	ND	0.500	0.079	ND	1.09	0.171	1
Pentane	ND	0.200	0.048	ND	0.590	0.140	1
Ethyl ether	ND	0.200	0.059	ND	0.606	0.179	1
1,1-Dichloroethene	ND	0.200	0.057	ND	0.793	0.224	1
Tertiary butyl Alcohol	ND	0.500	0.060	ND	1.52	0.182	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-02 Date Collected: 01/02/18 16:00
 Client ID: CAN 1787 SHELF 43 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
Methylene chloride	ND	0.500	0.062	ND	1.74	0.216	1
3-Chloropropene	ND	0.200	0.081	ND	0.626	0.254	1
Carbon disulfide	ND	0.200	0.035	ND	0.623	0.107	1
Freon-113	ND	0.200	0.051	ND	1.53	0.392	1
trans-1,2-Dichloroethene	ND	0.200	0.074	ND	0.793	0.293	1
1,1-Dichloroethane	ND	0.200	0.077	ND	0.809	0.312	1
Methyl tert butyl ether	ND	0.200	0.045	ND	0.721	0.163	1
Vinyl acetate	ND	1.00	0.057	ND	3.52	0.200	1
2-Butanone	ND	0.500	0.052	ND	1.47	0.154	1
cis-1,2-Dichloroethene	ND	0.200	0.059	ND	0.793	0.233	1
Ethyl Acetate	ND	0.500	0.131	ND	1.80	0.472	1
Chloroform	ND	0.200	0.045	ND	0.977	0.221	1
Tetrahydrofuran	ND	0.500	0.061	ND	1.47	0.179	1
2,2-Dichloropropane	ND	0.200	0.058	ND	0.924	0.269	1
1,2-Dichloroethane	ND	0.200	0.055	ND	0.809	0.223	1
n-Hexane	ND	0.200	0.052	ND	0.705	0.183	1
Diisopropyl ether	ND	0.200	0.066	ND	0.836	0.274	1
tert-Butyl Ethyl Ether	ND	0.200	0.052	ND	0.836	0.215	1
1,1,1-Trichloroethane	ND	0.200	0.057	ND	1.09	0.311	1
1,1-Dichloropropene	ND	0.200	0.072	ND	0.908	0.325	1
Benzene	ND	0.200	0.054	ND	0.639	0.172	1
Carbon tetrachloride	ND	0.200	0.047	ND	1.26	0.296	1
Cyclohexane	ND	0.200	0.066	ND	0.688	0.226	1
tert-Amyl Methyl Ether	ND	0.200	0.080	ND	0.836	0.332	1
Dibromomethane	ND	0.200	0.048	ND	1.42	0.338	1
1,2-Dichloropropane	ND	0.200	0.070	ND	0.924	0.322	1
Bromodichloromethane	ND	0.200	0.066	ND	1.34	0.439	1
1,4-Dioxane	ND	0.200	0.078	ND	0.721	0.281	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-02 Date Collected: 01/02/18 16:00
 Client ID: CAN 1787 SHELF 43 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
Trichloroethene	ND	0.200	0.071	ND	1.07	0.382	1
2,2,4-Trimethylpentane	ND	0.200	0.066	ND	0.934	0.308	1
Methyl Methacrylate	ND	0.500	0.147	ND	2.05	0.602	1
Heptane	ND	0.200	0.055	ND	0.820	0.227	1
cis-1,3-Dichloropropene	ND	0.200	0.075	ND	0.908	0.338	1
4-Methyl-2-pentanone	ND	0.500	0.061	ND	2.05	0.249	1
trans-1,3-Dichloropropene	ND	0.200	0.069	ND	0.908	0.315	1
1,1,2-Trichloroethane	ND	0.200	0.067	ND	1.09	0.364	1
Toluene	ND	0.200	0.063	ND	0.754	0.237	1
1,3-Dichloropropane	ND	0.200	0.078	ND	0.924	0.359	1
2-Hexanone	ND	0.200	0.060	ND	0.820	0.248	1
Dibromochloromethane	ND	0.200	0.075	ND	1.70	0.636	1
1,2-Dibromoethane	ND	0.200	0.078	ND	1.54	0.599	1
Butyl acetate	ND	0.500	0.114	ND	2.38	0.542	1
Octane	ND	0.200	0.042	ND	0.934	0.197	1
Tetrachloroethene	ND	0.200	0.076	ND	1.36	0.514	1
1,1,1,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
Chlorobenzene	ND	0.200	0.079	ND	0.921	0.363	1
Ethylbenzene	ND	0.200	0.056	ND	0.869	0.241	1
p/m-Xylene	ND	0.400	0.139	ND	1.74	0.604	1
Bromoform	ND	0.200	0.052	ND	2.07	0.541	1
Styrene	ND	0.200	0.080	ND	0.852	0.340	1
1,1,2,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
o-Xylene	ND	0.200	0.063	ND	0.869	0.274	1
1,2,3-Trichloropropane	ND	0.200	0.077	ND	1.21	0.462	1
Nonane	ND	0.200	0.064	ND	1.05	0.338	1
Isopropylbenzene	ND	0.200	0.043	ND	0.983	0.211	1
Bromobenzene	ND	0.200	0.079	ND	0.793	0.313	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-02 Date Collected: 01/02/18 16:00
 Client ID: CAN 1787 SHELF 43 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
2-Chlorotoluene	ND	0.200	0.049	ND	1.04	0.252	1
n-Propylbenzene	ND	0.200	0.056	ND	0.983	0.275	1
4-Chlorotoluene	ND	0.200	0.076	ND	1.04	0.396	1
4-Ethyltoluene	ND	0.200	0.078	ND	0.983	0.381	1
1,3,5-Trimethylbenzene	ND	0.200	0.058	ND	0.983	0.287	1
tert-Butylbenzene	ND	0.200	0.040	ND	1.10	0.221	1
1,2,4-Trimethylbenzene	ND	0.200	0.069	ND	0.983	0.341	1
Decane	ND	0.200	0.048	ND	1.16	0.282	1
Benzyl chloride	ND	0.200	0.065	ND	1.04	0.334	1
1,3-Dichlorobenzene	ND	0.200	0.064	ND	1.20	0.383	1
1,4-Dichlorobenzene	ND	0.200	0.042	ND	1.20	0.251	1
sec-Butylbenzene	ND	0.200	0.073	ND	1.10	0.401	1
p-Isopropyltoluene	ND	0.200	0.061	ND	1.10	0.334	1
1,2-Dichlorobenzene	ND	0.200	0.061	ND	1.20	0.369	1
n-Butylbenzene	ND	0.200	0.064	ND	1.10	0.351	1
1,2-Dibromo-3-chloropropane	ND	0.200	0.074	ND	1.93	0.719	1
Undecane	ND	0.200	0.053	ND	1.28	0.338	1
Dodecane	ND	0.200	0.056	ND	1.39	0.393	1
1,2,4-Trichlorobenzene	ND	0.200	0.061	ND	1.48	0.454	1
Naphthalene	ND	0.200	0.043	ND	1.05	0.223	1
1,2,3-Trichlorobenzene	ND	0.200	0.043	ND	1.48	0.320	1
Hexachlorobutadiene	ND	0.200	0.073	ND	2.13	0.781	1

Results	Qualifier	Units	RDL	Dilution Factor
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Tentatively Identified Compounds

No Tentatively Identified Compounds



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-02 Date Collected: 01/02/18 16:00
 Client ID: CAN 1787 SHELF 43 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	82		60-140
Bromochloromethane	92		60-140
chlorobenzene-d5	85		60-140



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800091-02	Date Collected:	01/02/18 16:00
Client ID:	CAN 1787 SHELF 43	Date Received:	01/03/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15-SIM		
Analytical Date:	01/03/18 20:12		
Analyst:	MB		

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Dichlorodifluoromethane	ND	0.200	0.011	ND	0.989	0.055	1
Chloromethane	ND	0.200	0.048	ND	0.413	0.099	1
Freon-114	ND	0.050	0.012	ND	0.349	0.081	1
Vinyl chloride	ND	0.020	0.006	ND	0.051	0.015	1
1,3-Butadiene	ND	0.020	0.007	ND	0.044	0.016	1
Bromomethane	ND	0.020	0.008	ND	0.078	0.031	1
Chloroethane	ND	0.100	0.017	ND	0.264	0.045	1
Acetone	ND	1.00	0.366	ND	2.38	0.869	1
Trichlorofluoromethane	ND	0.050	0.011	ND	0.281	0.064	1
Acrylonitrile	ND	0.500	0.025	ND	1.09	0.054	1
1,1-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
Freon-113	ND	0.050	0.013	ND	0.383	0.097	1
Halothane	ND	0.050	0.008	ND	0.404	0.065	1
trans-1,2-Dichloroethene	ND	0.020	0.006	ND	0.079	0.024	1
1,1-Dichloroethane	ND	0.020	0.007	ND	0.081	0.028	1
Methyl tert butyl ether	ND	0.200	0.006	ND	0.721	0.022	1
2-Butanone	ND	0.500	0.016	ND	1.47	0.047	1
cis-1,2-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Chloroform	ND	0.020	0.005	ND	0.098	0.024	1
1,2-Dichloroethane	ND	0.020	0.005	ND	0.081	0.020	1
1,1,1-Trichloroethane	ND	0.020	0.006	ND	0.109	0.033	1
Benzene	ND	0.100	0.019	ND	0.319	0.061	1
Carbon tetrachloride	ND	0.020	0.007	ND	0.126	0.044	1
1,2-Dichloropropane	ND	0.020	0.008	ND	0.092	0.037	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-02 Date Collected: 01/02/18 16:00
 Client ID: CAN 1787 SHELF 43 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
Bromodichloromethane	ND	0.020	0.008	ND	0.134	0.054	1
1,4-Dioxane	ND	0.100	0.014	ND	0.360	0.051	1
Trichloroethene	ND	0.020	0.007	ND	0.107	0.038	1
cis-1,3-Dichloropropene	ND	0.020	0.006	ND	0.091	0.027	1
4-Methyl-2-pentanone	ND	0.500	0.005	ND	2.05	0.021	1
trans-1,3-Dichloropropene	ND	0.020	0.008	ND	0.091	0.036	1
1,1,2-Trichloroethane	ND	0.020	0.004	ND	0.109	0.022	1
Toluene	ND	0.050	0.006	ND	0.188	0.023	1
Dibromochloromethane	ND	0.020	0.008	ND	0.170	0.068	1
1,2-Dibromoethane	ND	0.020	0.008	ND	0.154	0.062	1
Tetrachloroethene	ND	0.020	0.008	ND	0.136	0.054	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.006	ND	0.137	0.041	1
Chlorobenzene	ND	0.100	0.007	ND	0.461	0.032	1
Ethylbenzene	ND	0.020	0.007	ND	0.087	0.030	1
p/m-Xylene	ND	0.040	0.007	ND	0.174	0.030	1
Bromoform	ND	0.020	0.015	ND	0.207	0.155	1
Styrene	ND	0.020	0.007	ND	0.085	0.030	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.007	ND	0.137	0.048	1
o-Xylene	ND	0.020	0.008	ND	0.087	0.035	1
Isopropylbenzene	ND	0.200	0.007	ND	0.983	0.034	1
4-Ethyltoluene	ND	0.020	0.010	ND	0.098	0.049	1
1,3,5-Trimethylbenzene	ND	0.020	0.005	ND	0.098	0.025	1
1,2,4-Trimethylbenzene	ND	0.020	0.007	ND	0.098	0.034	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
1,4-Dichlorobenzene	ND	0.020	0.008	ND	0.120	0.048	1
sec-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
p-Isopropyltoluene	ND	0.200	0.007	ND	1.10	0.038	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-02 Date Collected: 01/02/18 16:00
 Client ID: CAN 1787 SHELF 43 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
1,2-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
n-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.008	ND	0.262	0.042	1
1,2,3-Trichlorobenzene	ND	0.050	0.019	ND	0.371	0.141	1
Hexachlorobutadiene	ND	0.050	0.007	ND	0.533	0.075	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	81		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	84		60-140

Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800091-03	Date Collected:	01/02/18 16:00
Client ID:	CAN 2268 SHELF 46	Date Received:	01/03/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15		
Analytical Date:	01/03/18 20:45		
Analyst:	MB		

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
Chlorodifluoromethane	ND	0.200	0.063	ND	0.707	0.221	1
Propylene	ND	0.500	0.093	ND	0.861	0.160	1
Propane	ND	0.500	0.114	ND	0.902	0.206	1
Dichlorodifluoromethane	ND	0.200	0.047	ND	0.989	0.230	1
Chloromethane	ND	0.200	0.096	ND	0.413	0.198	1
Freon-114	ND	0.200	0.042	ND	1.40	0.293	1
Methanol	ND	5.00	0.736	ND	6.55	0.964	1
Vinyl chloride	ND	0.200	0.039	ND	0.511	0.101	1
1,3-Butadiene	ND	0.200	0.080	ND	0.442	0.177	1
Butane	ND	0.200	0.044	ND	0.475	0.105	1
Bromomethane	ND	0.200	0.070	ND	0.777	0.270	1
Chloroethane	ND	0.200	0.077	ND	0.528	0.202	1
Ethanol	ND	5.00	0.542	ND	9.42	1.02	1
Dichlorofluoromethane	ND	0.200	0.057	ND	0.842	0.241	1
Vinyl bromide	ND	0.200	0.070	ND	0.874	0.306	1
Acrolein	ND	0.500	0.114	ND	1.15	0.261	1
Acetone	ND	1.00	0.165	ND	2.38	0.392	1
Acetonitrile	ND	0.200	0.076	ND	0.336	0.128	1
Trichlorofluoromethane	ND	0.200	0.042	ND	1.12	0.234	1
Isopropanol	ND	0.500	0.084	ND	1.23	0.206	1
Acrylonitrile	ND	0.500	0.079	ND	1.09	0.171	1
Pentane	ND	0.200	0.048	ND	0.590	0.140	1
Ethyl ether	ND	0.200	0.059	ND	0.606	0.179	1
1,1-Dichloroethene	ND	0.200	0.057	ND	0.793	0.224	1
Tertiary butyl Alcohol	ND	0.500	0.060	ND	1.52	0.182	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-03 Date Collected: 01/02/18 16:00
 Client ID: CAN 2268 SHELF 46 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
Methylene chloride	ND	0.500	0.062	ND	1.74	0.216	1
3-Chloropropene	ND	0.200	0.081	ND	0.626	0.254	1
Carbon disulfide	ND	0.200	0.035	ND	0.623	0.107	1
Freon-113	ND	0.200	0.051	ND	1.53	0.392	1
trans-1,2-Dichloroethene	ND	0.200	0.074	ND	0.793	0.293	1
1,1-Dichloroethane	ND	0.200	0.077	ND	0.809	0.312	1
Methyl tert butyl ether	ND	0.200	0.045	ND	0.721	0.163	1
Vinyl acetate	ND	1.00	0.057	ND	3.52	0.200	1
2-Butanone	ND	0.500	0.052	ND	1.47	0.154	1
cis-1,2-Dichloroethene	ND	0.200	0.059	ND	0.793	0.233	1
Ethyl Acetate	ND	0.500	0.131	ND	1.80	0.472	1
Chloroform	ND	0.200	0.045	ND	0.977	0.221	1
Tetrahydrofuran	ND	0.500	0.061	ND	1.47	0.179	1
2,2-Dichloropropane	ND	0.200	0.058	ND	0.924	0.269	1
1,2-Dichloroethane	ND	0.200	0.055	ND	0.809	0.223	1
n-Hexane	ND	0.200	0.052	ND	0.705	0.183	1
Diisopropyl ether	ND	0.200	0.066	ND	0.836	0.274	1
tert-Butyl Ethyl Ether	ND	0.200	0.052	ND	0.836	0.215	1
1,1,1-Trichloroethane	ND	0.200	0.057	ND	1.09	0.311	1
1,1-Dichloropropene	ND	0.200	0.072	ND	0.908	0.325	1
Benzene	ND	0.200	0.054	ND	0.639	0.172	1
Carbon tetrachloride	ND	0.200	0.047	ND	1.26	0.296	1
Cyclohexane	ND	0.200	0.066	ND	0.688	0.226	1
tert-Amyl Methyl Ether	ND	0.200	0.080	ND	0.836	0.332	1
Dibromomethane	ND	0.200	0.048	ND	1.42	0.338	1
1,2-Dichloropropane	ND	0.200	0.070	ND	0.924	0.322	1
Bromodichloromethane	ND	0.200	0.066	ND	1.34	0.439	1
1,4-Dioxane	ND	0.200	0.078	ND	0.721	0.281	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-03 Date Collected: 01/02/18 16:00
 Client ID: CAN 2268 SHELF 46 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
Trichloroethene	ND	0.200	0.071	ND	1.07	0.382	1
2,2,4-Trimethylpentane	ND	0.200	0.066	ND	0.934	0.308	1
Methyl Methacrylate	ND	0.500	0.147	ND	2.05	0.602	1
Heptane	ND	0.200	0.055	ND	0.820	0.227	1
cis-1,3-Dichloropropene	ND	0.200	0.075	ND	0.908	0.338	1
4-Methyl-2-pentanone	ND	0.500	0.061	ND	2.05	0.249	1
trans-1,3-Dichloropropene	ND	0.200	0.069	ND	0.908	0.315	1
1,1,2-Trichloroethane	ND	0.200	0.067	ND	1.09	0.364	1
Toluene	ND	0.200	0.063	ND	0.754	0.237	1
1,3-Dichloropropane	ND	0.200	0.078	ND	0.924	0.359	1
2-Hexanone	ND	0.200	0.060	ND	0.820	0.248	1
Dibromochloromethane	ND	0.200	0.075	ND	1.70	0.636	1
1,2-Dibromoethane	ND	0.200	0.078	ND	1.54	0.599	1
Butyl acetate	ND	0.500	0.114	ND	2.38	0.542	1
Octane	ND	0.200	0.042	ND	0.934	0.197	1
Tetrachloroethene	ND	0.200	0.076	ND	1.36	0.514	1
1,1,1,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
Chlorobenzene	ND	0.200	0.079	ND	0.921	0.363	1
Ethylbenzene	ND	0.200	0.056	ND	0.869	0.241	1
p/m-Xylene	ND	0.400	0.139	ND	1.74	0.604	1
Bromoform	ND	0.200	0.052	ND	2.07	0.541	1
Styrene	ND	0.200	0.080	ND	0.852	0.340	1
1,1,2,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
o-Xylene	ND	0.200	0.063	ND	0.869	0.274	1
1,2,3-Trichloropropane	ND	0.200	0.077	ND	1.21	0.462	1
Nonane	ND	0.200	0.064	ND	1.05	0.338	1
Isopropylbenzene	ND	0.200	0.043	ND	0.983	0.211	1
Bromobenzene	ND	0.200	0.079	ND	0.793	0.313	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-03 Date Collected: 01/02/18 16:00
 Client ID: CAN 2268 SHELF 46 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
2-Chlorotoluene	ND	0.200	0.049	ND	1.04	0.252	1
n-Propylbenzene	ND	0.200	0.056	ND	0.983	0.275	1
4-Chlorotoluene	ND	0.200	0.076	ND	1.04	0.396	1
4-Ethyltoluene	ND	0.200	0.078	ND	0.983	0.381	1
1,3,5-Trimethylbenzene	ND	0.200	0.058	ND	0.983	0.287	1
tert-Butylbenzene	ND	0.200	0.040	ND	1.10	0.221	1
1,2,4-Trimethylbenzene	ND	0.200	0.069	ND	0.983	0.341	1
Decane	ND	0.200	0.048	ND	1.16	0.282	1
Benzyl chloride	ND	0.200	0.065	ND	1.04	0.334	1
1,3-Dichlorobenzene	ND	0.200	0.064	ND	1.20	0.383	1
1,4-Dichlorobenzene	ND	0.200	0.042	ND	1.20	0.251	1
sec-Butylbenzene	ND	0.200	0.073	ND	1.10	0.401	1
p-Isopropyltoluene	ND	0.200	0.061	ND	1.10	0.334	1
1,2-Dichlorobenzene	ND	0.200	0.061	ND	1.20	0.369	1
n-Butylbenzene	ND	0.200	0.064	ND	1.10	0.351	1
1,2-Dibromo-3-chloropropane	ND	0.200	0.074	ND	1.93	0.719	1
Undecane	ND	0.200	0.053	ND	1.28	0.338	1
Dodecane	ND	0.200	0.056	ND	1.39	0.393	1
1,2,4-Trichlorobenzene	ND	0.200	0.061	ND	1.48	0.454	1
Naphthalene	ND	0.200	0.043	ND	1.05	0.223	1
1,2,3-Trichlorobenzene	ND	0.200	0.043	ND	1.48	0.320	1
Hexachlorobutadiene	ND	0.200	0.073	ND	2.13	0.781	1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
Ethene, chlorotrifluoro-	1.1	NJ	ppbV		1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-03 Date Collected: 01/02/18 16:00
 Client ID: CAN 2268 SHELF 46 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	83		60-140
Bromochloromethane	89		60-140
chlorobenzene-d5	81		60-140

Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800091-03	Date Collected:	01/02/18 16:00
Client ID:	CAN 2268 SHELF 46	Date Received:	01/03/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15-SIM		
Analytical Date:	01/03/18 20:45		
Analyst:	MB		

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Dichlorodifluoromethane	ND	0.200	0.011	ND	0.989	0.055	1
Chloromethane	ND	0.200	0.048	ND	0.413	0.099	1
Freon-114	ND	0.050	0.012	ND	0.349	0.081	1
Vinyl chloride	ND	0.020	0.006	ND	0.051	0.015	1
1,3-Butadiene	ND	0.020	0.007	ND	0.044	0.016	1
Bromomethane	ND	0.020	0.008	ND	0.078	0.031	1
Chloroethane	ND	0.100	0.017	ND	0.264	0.045	1
Acetone	ND	1.00	0.366	ND	2.38	0.869	1
Trichlorofluoromethane	ND	0.050	0.011	ND	0.281	0.064	1
Acrylonitrile	ND	0.500	0.025	ND	1.09	0.054	1
1,1-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
Freon-113	0.103	0.050	0.013	0.789	0.383	0.097	1
Halothane	ND	0.050	0.008	ND	0.404	0.065	1
trans-1,2-Dichloroethene	ND	0.020	0.006	ND	0.079	0.024	1
1,1-Dichloroethane	ND	0.020	0.007	ND	0.081	0.028	1
Methyl tert butyl ether	ND	0.200	0.006	ND	0.721	0.022	1
2-Butanone	ND	0.500	0.016	ND	1.47	0.047	1
cis-1,2-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Chloroform	ND	0.020	0.005	ND	0.098	0.024	1
1,2-Dichloroethane	ND	0.020	0.005	ND	0.081	0.020	1
1,1,1-Trichloroethane	ND	0.020	0.006	ND	0.109	0.033	1
Benzene	ND	0.100	0.019	ND	0.319	0.061	1
Carbon tetrachloride	ND	0.020	0.007	ND	0.126	0.044	1
1,2-Dichloropropane	ND	0.020	0.008	ND	0.092	0.037	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-03 Date Collected: 01/02/18 16:00
 Client ID: CAN 2268 SHELF 46 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
Bromodichloromethane	ND	0.020	0.008	ND	0.134	0.054	1
1,4-Dioxane	ND	0.100	0.014	ND	0.360	0.051	1
Trichloroethene	ND	0.020	0.007	ND	0.107	0.038	1
cis-1,3-Dichloropropene	ND	0.020	0.006	ND	0.091	0.027	1
4-Methyl-2-pentanone	ND	0.500	0.005	ND	2.05	0.021	1
trans-1,3-Dichloropropene	ND	0.020	0.008	ND	0.091	0.036	1
1,1,2-Trichloroethane	ND	0.020	0.004	ND	0.109	0.022	1
Toluene	ND	0.050	0.006	ND	0.188	0.023	1
Dibromochloromethane	ND	0.020	0.008	ND	0.170	0.068	1
1,2-Dibromoethane	ND	0.020	0.008	ND	0.154	0.062	1
Tetrachloroethene	ND	0.020	0.008	ND	0.136	0.054	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.006	ND	0.137	0.041	1
Chlorobenzene	ND	0.100	0.007	ND	0.461	0.032	1
Ethylbenzene	ND	0.020	0.007	ND	0.087	0.030	1
p/m-Xylene	ND	0.040	0.007	ND	0.174	0.030	1
Bromoform	ND	0.020	0.015	ND	0.207	0.155	1
Styrene	ND	0.020	0.007	ND	0.085	0.030	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.007	ND	0.137	0.048	1
o-Xylene	ND	0.020	0.008	ND	0.087	0.035	1
Isopropylbenzene	ND	0.200	0.007	ND	0.983	0.034	1
4-Ethyltoluene	ND	0.020	0.010	ND	0.098	0.049	1
1,3,5-Trimethylbenzene	ND	0.020	0.005	ND	0.098	0.025	1
1,2,4-Trimethylbenzene	ND	0.020	0.007	ND	0.098	0.034	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
1,4-Dichlorobenzene	ND	0.020	0.008	ND	0.120	0.048	1
sec-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
p-Isopropyltoluene	ND	0.200	0.007	ND	1.10	0.038	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800091

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800091-03 Date Collected: 01/02/18 16:00
 Client ID: CAN 2268 SHELF 46 Date Received: 01/03/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
1,2-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
n-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.008	ND	0.262	0.042	1
1,2,3-Trichlorobenzene	ND	0.050	0.019	ND	0.371	0.141	1
Hexachlorobutadiene	ND	0.050	0.007	ND	0.533	0.075	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	80		60-140
bromochloromethane	89		60-140
chlorobenzene-d5	81		60-140

Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800402-01	Date Collected:	01/05/18 16:00
Client ID:	CAN 393 SHELF 7	Date Received:	01/06/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15		
Analytical Date:	01/06/18 18:03		
Analyst:	MB		

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air - Mansfield Lab							
Chlorodifluoromethane	ND	0.200	0.063	ND	0.707	0.221	1
Propylene	ND	0.500	0.093	ND	0.861	0.160	1
Dichlorodifluoromethane	ND	0.200	0.047	ND	0.989	0.230	1
Chloromethane	ND	0.200	0.096	ND	0.413	0.198	1
Freon-114	ND	0.200	0.042	ND	1.40	0.293	1
Methanol	ND	5.00	0.736	ND	6.55	0.964	1
Vinyl chloride	ND	0.200	0.039	ND	0.511	0.101	1
1,3-Butadiene	ND	0.200	0.080	ND	0.442	0.177	1
Butane	ND	0.200	0.044	ND	0.475	0.105	1
Bromomethane	ND	0.200	0.070	ND	0.777	0.270	1
Chloroethane	ND	0.200	0.077	ND	0.528	0.202	1
Ethanol	ND	5.00	0.542	ND	9.42	1.02	1
Dichlorofluoromethane	ND	0.200	0.057	ND	0.842	0.241	1
Vinyl bromide	ND	0.200	0.070	ND	0.874	0.306	1
Acrolein	ND	0.500	0.114	ND	1.15	0.261	1
Acetone	ND	1.00	0.165	ND	2.38	0.392	1
Acetonitrile	ND	0.200	0.076	ND	0.336	0.128	1
Trichlorofluoromethane	ND	0.200	0.042	ND	1.12	0.234	1
Isopropanol	ND	0.500	0.084	ND	1.23	0.206	1
Acrylonitrile	ND	0.500	0.079	ND	1.09	0.171	1
Pentane	ND	0.200	0.048	ND	0.590	0.140	1
Ethyl ether	ND	0.200	0.059	ND	0.606	0.179	1
1,1-Dichloroethene	ND	0.200	0.057	ND	0.793	0.224	1
Tertiary butyl Alcohol	ND	0.500	0.060	ND	1.52	0.182	1
Methylene chloride	ND	0.500	0.062	ND	1.74	0.216	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
3-Chloropropene	ND	0.200	0.081	ND	0.626	0.254	1
Carbon disulfide	ND	0.200	0.035	ND	0.623	0.107	1
Freon-113	ND	0.200	0.051	ND	1.53	0.392	1
trans-1,2-Dichloroethene	ND	0.200	0.074	ND	0.793	0.293	1
1,1-Dichloroethane	ND	0.200	0.077	ND	0.809	0.312	1
Methyl tert butyl ether	ND	0.200	0.045	ND	0.721	0.163	1
Vinyl acetate	ND	1.00	0.057	ND	3.52	0.200	1
2-Butanone	ND	0.500	0.052	ND	1.47	0.154	1
cis-1,2-Dichloroethene	ND	0.200	0.059	ND	0.793	0.233	1
Ethyl Acetate	ND	0.500	0.131	ND	1.80	0.472	1
Chloroform	ND	0.200	0.045	ND	0.977	0.221	1
Tetrahydrofuran	ND	0.500	0.061	ND	1.47	0.179	1
2,2-Dichloropropane	ND	0.200	0.058	ND	0.924	0.269	1
1,2-Dichloroethane	ND	0.200	0.055	ND	0.809	0.223	1
n-Hexane	ND	0.200	0.052	ND	0.705	0.183	1
Diisopropyl ether	ND	0.200	0.066	ND	0.836	0.274	1
tert-Butyl Ethyl Ether	ND	0.200	0.052	ND	0.836	0.215	1
1,1,1-Trichloroethane	ND	0.200	0.057	ND	1.09	0.311	1
1,1-Dichloropropene	ND	0.200	0.072	ND	0.908	0.325	1
Benzene	ND	0.200	0.054	ND	0.639	0.172	1
Carbon tetrachloride	ND	0.200	0.047	ND	1.26	0.296	1
Cyclohexane	ND	0.200	0.066	ND	0.688	0.226	1
tert-Amyl Methyl Ether	ND	0.200	0.080	ND	0.836	0.332	1
Dibromomethane	ND	0.200	0.048	ND	1.42	0.338	1
1,2-Dichloropropane	ND	0.200	0.070	ND	0.924	0.322	1
Bromodichloromethane	ND	0.200	0.066	ND	1.34	0.439	1
1,4-Dioxane	ND	0.200	0.078	ND	0.721	0.281	1
Trichloroethene	ND	0.200	0.071	ND	1.07	0.382	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
2,2,4-Trimethylpentane	ND	0.200	0.066	ND	0.934	0.308	1
Methyl Methacrylate	ND	0.500	0.147	ND	2.05	0.602	1
Heptane	ND	0.200	0.055	ND	0.820	0.227	1
cis-1,3-Dichloropropene	ND	0.200	0.075	ND	0.908	0.338	1
4-Methyl-2-pentanone	ND	0.500	0.061	ND	2.05	0.249	1
trans-1,3-Dichloropropene	ND	0.200	0.069	ND	0.908	0.315	1
1,1,2-Trichloroethane	ND	0.200	0.067	ND	1.09	0.364	1
Toluene	ND	0.200	0.063	ND	0.754	0.237	1
1,3-Dichloropropane	ND	0.200	0.078	ND	0.924	0.359	1
2-Hexanone	ND	0.200	0.060	ND	0.820	0.248	1
Dibromochloromethane	ND	0.200	0.075	ND	1.70	0.636	1
1,2-Dibromoethane	ND	0.200	0.078	ND	1.54	0.599	1
Butyl acetate	ND	0.500	0.114	ND	2.38	0.542	1
Octane	ND	0.200	0.042	ND	0.934	0.197	1
Tetrachloroethene	ND	0.200	0.076	ND	1.36	0.514	1
1,1,1,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
Chlorobenzene	ND	0.200	0.079	ND	0.921	0.363	1
Ethylbenzene	ND	0.200	0.056	ND	0.869	0.241	1
p/m-Xylene	ND	0.400	0.139	ND	1.74	0.604	1
Bromoform	ND	0.200	0.052	ND	2.07	0.541	1
Styrene	ND	0.200	0.080	ND	0.852	0.340	1
1,1,2,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
o-Xylene	ND	0.200	0.063	ND	0.869	0.274	1
1,2,3-Trichloropropane	ND	0.200	0.077	ND	1.21	0.462	1
Nonane	ND	0.200	0.064	ND	1.05	0.338	1
Isopropylbenzene	ND	0.200	0.043	ND	0.983	0.211	1
Bromobenzene	ND	0.200	0.079	ND	0.793	0.313	1
2-Chlorotoluene	ND	0.200	0.049	ND	1.04	0.252	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
n-Propylbenzene	ND	0.200	0.056	ND	0.983	0.275	1
4-Chlorotoluene	ND	0.200	0.076	ND	1.04	0.396	1
4-Ethyltoluene	ND	0.200	0.078	ND	0.983	0.381	1
1,3,5-Trimethylbenzene	ND	0.200	0.058	ND	0.983	0.287	1
tert-Butylbenzene	ND	0.200	0.040	ND	1.10	0.221	1
1,2,4-Trimethylbenzene	ND	0.200	0.069	ND	0.983	0.341	1
Decane	ND	0.200	0.048	ND	1.16	0.282	1
Benzyl chloride	ND	0.200	0.065	ND	1.04	0.334	1
1,3-Dichlorobenzene	ND	0.200	0.064	ND	1.20	0.383	1
1,4-Dichlorobenzene	ND	0.200	0.042	ND	1.20	0.251	1
sec-Butylbenzene	ND	0.200	0.073	ND	1.10	0.401	1
p-Isopropyltoluene	ND	0.200	0.061	ND	1.10	0.334	1
1,2-Dichlorobenzene	ND	0.200	0.061	ND	1.20	0.369	1
n-Butylbenzene	ND	0.200	0.064	ND	1.10	0.351	1
1,2-Dibromo-3-chloropropane	ND	0.200	0.074	ND	1.93	0.719	1
Undecane	ND	0.200	0.053	ND	1.28	0.338	1
Dodecane	ND	0.200	0.056	ND	1.39	0.393	1
1,2,4-Trichlorobenzene	ND	0.200	0.061	ND	1.48	0.454	1
Naphthalene	ND	0.200	0.043	ND	1.05	0.223	1
1,2,3-Trichlorobenzene	ND	0.200	0.043	ND	1.48	0.320	1
Hexachlorobutadiene	ND	0.200	0.073	ND	2.13	0.781	1

	Results	Qualifier	Units	RDL	Dilution Factor
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Tentatively Identified Compounds

No Tentatively Identified Compounds



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	77		60-140
Bromochloromethane	87		60-140
chlorobenzene-d5	79		60-140



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800402-01	Date Collected:	01/05/18 16:00
Client ID:	CAN 393 SHELF 7	Date Received:	01/06/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15-SIM		
Analytical Date:	01/06/18 18:03		
Analyst:	MB		

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Dichlorodifluoromethane	ND	0.200	0.011	ND	0.989	0.055	1
Chloromethane	ND	0.200	0.048	ND	0.413	0.099	1
Freon-114	ND	0.050	0.012	ND	0.349	0.081	1
Vinyl chloride	ND	0.020	0.006	ND	0.051	0.015	1
1,3-Butadiene	ND	0.020	0.007	ND	0.044	0.016	1
Bromomethane	ND	0.020	0.008	ND	0.078	0.031	1
Chloroethane	ND	0.100	0.017	ND	0.264	0.045	1
Acetone	ND	1.00	0.366	ND	2.38	0.869	1
Trichlorofluoromethane	ND	0.050	0.011	ND	0.281	0.064	1
Acrylonitrile	ND	0.500	0.025	ND	1.09	0.054	1
1,1-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
Freon-113	ND	0.050	0.013	ND	0.383	0.097	1
Halothane	ND	0.050	0.008	ND	0.404	0.065	1
trans-1,2-Dichloroethene	ND	0.020	0.006	ND	0.079	0.024	1
1,1-Dichloroethane	ND	0.020	0.007	ND	0.081	0.028	1
Methyl tert butyl ether	ND	0.200	0.006	ND	0.721	0.022	1
2-Butanone	ND	0.500	0.016	ND	1.47	0.047	1
cis-1,2-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Chloroform	ND	0.020	0.005	ND	0.098	0.024	1
1,2-Dichloroethane	ND	0.020	0.005	ND	0.081	0.020	1
1,1,1-Trichloroethane	ND	0.020	0.006	ND	0.109	0.033	1
Benzene	ND	0.100	0.019	ND	0.319	0.061	1
Carbon tetrachloride	ND	0.020	0.007	ND	0.126	0.044	1
1,2-Dichloropropane	ND	0.020	0.008	ND	0.092	0.037	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
Bromodichloromethane	ND	0.020	0.008	ND	0.134	0.054	1
1,4-Dioxane	ND	0.100	0.014	ND	0.360	0.051	1
Trichloroethene	ND	0.020	0.007	ND	0.107	0.038	1
cis-1,3-Dichloropropene	ND	0.020	0.006	ND	0.091	0.027	1
4-Methyl-2-pentanone	ND	0.500	0.005	ND	2.05	0.021	1
trans-1,3-Dichloropropene	ND	0.020	0.008	ND	0.091	0.036	1
1,1,2-Trichloroethane	ND	0.020	0.004	ND	0.109	0.022	1
Toluene	ND	0.050	0.006	ND	0.188	0.023	1
Dibromochloromethane	ND	0.020	0.008	ND	0.170	0.068	1
1,2-Dibromoethane	ND	0.020	0.008	ND	0.154	0.062	1
Tetrachloroethene	ND	0.020	0.008	ND	0.136	0.054	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.006	ND	0.137	0.041	1
Chlorobenzene	ND	0.100	0.007	ND	0.461	0.032	1
Ethylbenzene	ND	0.020	0.007	ND	0.087	0.030	1
p/m-Xylene	ND	0.040	0.007	ND	0.174	0.030	1
Bromoform	ND	0.020	0.015	ND	0.207	0.155	1
Styrene	ND	0.020	0.007	ND	0.085	0.030	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.007	ND	0.137	0.048	1
o-Xylene	ND	0.020	0.008	ND	0.087	0.035	1
Isopropylbenzene	ND	0.200	0.007	ND	0.983	0.034	1
4-Ethyltoluene	ND	0.020	0.010	ND	0.098	0.049	1
1,3,5-Trimethylbenzene	ND	0.020	0.005	ND	0.098	0.025	1
1,2,4-Trimethylbenzene	ND	0.020	0.007	ND	0.098	0.034	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
1,4-Dichlorobenzene	ND	0.020	0.008	ND	0.120	0.048	1
sec-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
p-Isopropyltoluene	ND	0.200	0.007	ND	1.10	0.038	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800402

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800402-01 Date Collected: 01/05/18 16:00
 Client ID: CAN 393 SHELF 7 Date Received: 01/06/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
1,2-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
n-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.008	ND	0.262	0.042	1
1,2,3-Trichlorobenzene	ND	0.050	0.019	ND	0.371	0.141	1
Hexachlorobutadiene	ND	0.050	0.007	ND	0.533	0.075	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	80		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	82		60-140

Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800504

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800504-02	Date Collected:	01/08/18 16:00
Client ID:	CAN 561 SHELF 5	Date Received:	01/09/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15		
Analytical Date:	01/09/18 16:44		
Analyst:	RY		

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
Chlorodifluoromethane	ND	0.200	0.063	ND	0.707	0.221	1
Propylene	ND	0.500	0.093	ND	0.861	0.160	1
Propane	ND	0.500	0.114	ND	0.902	0.206	1
Dichlorodifluoromethane	ND	0.200	0.047	ND	0.989	0.230	1
Chloromethane	ND	0.200	0.096	ND	0.413	0.198	1
Freon-114	ND	0.200	0.042	ND	1.40	0.293	1
Methanol	ND	5.00	0.736	ND	6.55	0.964	1
Vinyl chloride	ND	0.200	0.039	ND	0.511	0.101	1
1,3-Butadiene	ND	0.200	0.080	ND	0.442	0.177	1
Butane	ND	0.200	0.044	ND	0.475	0.105	1
Bromomethane	ND	0.200	0.070	ND	0.777	0.270	1
Chloroethane	ND	0.200	0.077	ND	0.528	0.202	1
Ethanol	ND	5.00	0.542	ND	9.42	1.02	1
Dichlorofluoromethane	ND	0.200	0.057	ND	0.842	0.241	1
Vinyl bromide	ND	0.200	0.070	ND	0.874	0.306	1
Acrolein	ND	0.500	0.114	ND	1.15	0.261	1
Acetone	ND	1.00	0.165	ND	2.38	0.392	1
Acetonitrile	ND	0.200	0.076	ND	0.336	0.128	1
Trichlorofluoromethane	ND	0.200	0.042	ND	1.12	0.234	1
Isopropanol	ND	0.500	0.084	ND	1.23	0.206	1
Acrylonitrile	ND	0.500	0.079	ND	1.09	0.171	1
Pentane	ND	0.200	0.048	ND	0.590	0.140	1
Ethyl ether	ND	0.200	0.059	ND	0.606	0.179	1
1,1-Dichloroethene	ND	0.200	0.057	ND	0.793	0.224	1
Tertiary butyl Alcohol	ND	0.500	0.060	ND	1.52	0.182	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800504

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800504-02 Date Collected: 01/08/18 16:00
 Client ID: CAN 561 SHELF 5 Date Received: 01/09/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
Methylene chloride	ND	0.500	0.062	ND	1.74	0.216	1
3-Chloropropene	ND	0.200	0.081	ND	0.626	0.254	1
Carbon disulfide	ND	0.200	0.035	ND	0.623	0.107	1
Freon-113	ND	0.200	0.051	ND	1.53	0.392	1
trans-1,2-Dichloroethene	ND	0.200	0.074	ND	0.793	0.293	1
1,1-Dichloroethane	ND	0.200	0.077	ND	0.809	0.312	1
Methyl tert butyl ether	ND	0.200	0.045	ND	0.721	0.163	1
Vinyl acetate	ND	1.00	0.057	ND	3.52	0.200	1
2-Butanone	ND	0.500	0.052	ND	1.47	0.154	1
cis-1,2-Dichloroethene	ND	0.200	0.059	ND	0.793	0.233	1
Ethyl Acetate	ND	0.500	0.131	ND	1.80	0.472	1
Chloroform	ND	0.200	0.045	ND	0.977	0.221	1
Tetrahydrofuran	ND	0.500	0.061	ND	1.47	0.179	1
2,2-Dichloropropane	ND	0.200	0.058	ND	0.924	0.269	1
1,2-Dichloroethane	ND	0.200	0.055	ND	0.809	0.223	1
n-Hexane	ND	0.200	0.052	ND	0.705	0.183	1
Diisopropyl ether	ND	0.200	0.066	ND	0.836	0.274	1
tert-Butyl Ethyl Ether	ND	0.200	0.052	ND	0.836	0.215	1
1,1,1-Trichloroethane	ND	0.200	0.057	ND	1.09	0.311	1
1,1-Dichloropropene	ND	0.200	0.072	ND	0.908	0.325	1
Benzene	ND	0.200	0.054	ND	0.639	0.172	1
Carbon tetrachloride	ND	0.200	0.047	ND	1.26	0.296	1
Cyclohexane	ND	0.200	0.066	ND	0.688	0.226	1
tert-Amyl Methyl Ether	ND	0.200	0.080	ND	0.836	0.332	1
Dibromomethane	ND	0.200	0.048	ND	1.42	0.338	1
1,2-Dichloropropane	ND	0.200	0.070	ND	0.924	0.322	1
Bromodichloromethane	ND	0.200	0.066	ND	1.34	0.439	1
1,4-Dioxane	ND	0.200	0.078	ND	0.721	0.281	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800504

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800504-02 Date Collected: 01/08/18 16:00
 Client ID: CAN 561 SHELF 5 Date Received: 01/09/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							
Trichloroethene	ND	0.200	0.071	ND	1.07	0.382	1
2,2,4-Trimethylpentane	ND	0.200	0.066	ND	0.934	0.308	1
Methyl Methacrylate	ND	0.500	0.147	ND	2.05	0.602	1
Heptane	ND	0.200	0.055	ND	0.820	0.227	1
cis-1,3-Dichloropropene	ND	0.200	0.075	ND	0.908	0.338	1
4-Methyl-2-pentanone	ND	0.500	0.061	ND	2.05	0.249	1
trans-1,3-Dichloropropene	ND	0.200	0.069	ND	0.908	0.315	1
1,1,2-Trichloroethane	ND	0.200	0.067	ND	1.09	0.364	1
Toluene	ND	0.200	0.063	ND	0.754	0.237	1
1,3-Dichloropropane	ND	0.200	0.078	ND	0.924	0.359	1
2-Hexanone	ND	0.200	0.060	ND	0.820	0.248	1
Dibromochloromethane	ND	0.200	0.075	ND	1.70	0.636	1
1,2-Dibromoethane	ND	0.200	0.078	ND	1.54	0.599	1
Butyl acetate	ND	0.500	0.114	ND	2.38	0.542	1
Octane	ND	0.200	0.042	ND	0.934	0.197	1
Tetrachloroethene	ND	0.200	0.076	ND	1.36	0.514	1
1,1,1,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
Chlorobenzene	ND	0.200	0.079	ND	0.921	0.363	1
Ethylbenzene	ND	0.200	0.056	ND	0.869	0.241	1
p/m-Xylene	ND	0.400	0.139	ND	1.74	0.604	1
Bromoform	ND	0.200	0.052	ND	2.07	0.541	1
Styrene	ND	0.200	0.080	ND	0.852	0.340	1
1,1,2,2-Tetrachloroethane	ND	0.200	0.055	ND	1.37	0.376	1
o-Xylene	ND	0.200	0.063	ND	0.869	0.274	1
1,2,3-Trichloropropane	ND	0.200	0.077	ND	1.21	0.462	1
Nonane	ND	0.200	0.064	ND	1.05	0.338	1
Isopropylbenzene	ND	0.200	0.043	ND	0.983	0.211	1
Bromobenzene	ND	0.200	0.079	ND	0.793	0.313	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800504

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800504-02 Date Collected: 01/08/18 16:00
 Client ID: CAN 561 SHELF 5 Date Received: 01/09/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	Qualifier
Volatile Organics in Air - Mansfield Lab							
2-Chlorotoluene	ND	0.200	0.049	ND	1.04	0.252	1
n-Propylbenzene	ND	0.200	0.056	ND	0.983	0.275	1
4-Chlorotoluene	ND	0.200	0.076	ND	1.04	0.396	1
4-Ethyltoluene	ND	0.200	0.078	ND	0.983	0.381	1
1,3,5-Trimethylbenzene	ND	0.200	0.058	ND	0.983	0.287	1
tert-Butylbenzene	ND	0.200	0.040	ND	1.10	0.221	1
1,2,4-Trimethylbenzene	ND	0.200	0.069	ND	0.983	0.341	1
Decane	ND	0.200	0.048	ND	1.16	0.282	1
Benzyl chloride	ND	0.200	0.065	ND	1.04	0.334	1
1,3-Dichlorobenzene	ND	0.200	0.064	ND	1.20	0.383	1
1,4-Dichlorobenzene	ND	0.200	0.042	ND	1.20	0.251	1
sec-Butylbenzene	ND	0.200	0.073	ND	1.10	0.401	1
p-Isopropyltoluene	ND	0.200	0.061	ND	1.10	0.334	1
1,2-Dichlorobenzene	ND	0.200	0.061	ND	1.20	0.369	1
n-Butylbenzene	ND	0.200	0.064	ND	1.10	0.351	1
1,2-Dibromo-3-chloropropane	ND	0.200	0.074	ND	1.93	0.719	1
Undecane	ND	0.200	0.053	ND	1.28	0.338	1
Dodecane	ND	0.200	0.056	ND	1.39	0.393	1
1,2,4-Trichlorobenzene	ND	0.200	0.061	ND	1.48	0.454	1
Naphthalene	ND	0.200	0.043	ND	1.05	0.223	1
1,2,3-Trichlorobenzene	ND	0.200	0.043	ND	1.48	0.320	1
Hexachlorobutadiene	ND	0.200	0.073	ND	2.13	0.781	1

Results	Qualifier	Units	RDL	Dilution Factor
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Tentatively Identified Compounds

No Tentatively Identified Compounds



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800504

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800504-02 Date Collected: 01/08/18 16:00
 Client ID: CAN 561 SHELF 5 Date Received: 01/09/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air - Mansfield Lab							

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	80		60-140
Bromochloromethane	86		60-140
chlorobenzene-d5	81		60-140

Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800504

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID:	L1800504-02	Date Collected:	01/08/18 16:00
Client ID:	CAN 561 SHELF 5	Date Received:	01/09/18
Sample Location:		Field Prep:	Not Specified
Sample Depth:			
Matrix:	Air		
Anaytical Method:	48,TO-15-SIM		
Analytical Date:	01/09/18 16:44		
Analyst:	RY		

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Dichlorodifluoromethane	ND	0.200	0.011	ND	0.989	0.055	1
Chloromethane	ND	0.200	0.048	ND	0.413	0.099	1
Freon-114	ND	0.050	0.012	ND	0.349	0.081	1
Vinyl chloride	ND	0.020	0.006	ND	0.051	0.015	1
1,3-Butadiene	ND	0.020	0.007	ND	0.044	0.016	1
Bromomethane	ND	0.020	0.008	ND	0.078	0.031	1
Chloroethane	ND	0.100	0.017	ND	0.264	0.045	1
Acetone	ND	1.00	0.366	ND	2.38	0.869	1
Trichlorofluoromethane	ND	0.050	0.011	ND	0.281	0.064	1
Acrylonitrile	ND	0.500	0.025	ND	1.09	0.054	1
1,1-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Methylene chloride	ND	0.500	0.250	ND	1.74	0.869	1
Freon-113	ND	0.050	0.013	ND	0.383	0.097	1
Halothane	ND	0.050	0.008	ND	0.404	0.065	1
trans-1,2-Dichloroethene	ND	0.020	0.006	ND	0.079	0.024	1
1,1-Dichloroethane	ND	0.020	0.007	ND	0.081	0.028	1
Methyl tert butyl ether	ND	0.200	0.006	ND	0.721	0.022	1
2-Butanone	ND	0.500	0.016	ND	1.47	0.047	1
cis-1,2-Dichloroethene	ND	0.020	0.007	ND	0.079	0.028	1
Chloroform	ND	0.020	0.005	ND	0.098	0.024	1
1,2-Dichloroethane	ND	0.020	0.005	ND	0.081	0.020	1
1,1,1-Trichloroethane	ND	0.020	0.006	ND	0.109	0.033	1
Benzene	ND	0.100	0.019	ND	0.319	0.061	1
Carbon tetrachloride	ND	0.020	0.007	ND	0.126	0.044	1
1,2-Dichloropropane	ND	0.020	0.008	ND	0.092	0.037	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800504

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800504-02 Date Collected: 01/08/18 16:00
 Client ID: CAN 561 SHELF 5 Date Received: 01/09/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
Bromodichloromethane	ND	0.020	0.008	ND	0.134	0.054	1
1,4-Dioxane	ND	0.100	0.014	ND	0.360	0.051	1
Trichloroethene	ND	0.020	0.007	ND	0.107	0.038	1
cis-1,3-Dichloropropene	ND	0.020	0.006	ND	0.091	0.027	1
4-Methyl-2-pentanone	ND	0.500	0.005	ND	2.05	0.021	1
trans-1,3-Dichloropropene	ND	0.020	0.008	ND	0.091	0.036	1
1,1,2-Trichloroethane	ND	0.020	0.004	ND	0.109	0.022	1
Toluene	ND	0.050	0.006	ND	0.188	0.023	1
Dibromochloromethane	ND	0.020	0.008	ND	0.170	0.068	1
1,2-Dibromoethane	ND	0.020	0.008	ND	0.154	0.062	1
Tetrachloroethene	ND	0.020	0.008	ND	0.136	0.054	1
1,1,1,2-Tetrachloroethane	ND	0.020	0.006	ND	0.137	0.041	1
Chlorobenzene	ND	0.100	0.007	ND	0.461	0.032	1
Ethylbenzene	ND	0.020	0.007	ND	0.087	0.030	1
p/m-Xylene	ND	0.040	0.007	ND	0.174	0.030	1
Bromoform	ND	0.020	0.015	ND	0.207	0.155	1
Styrene	ND	0.020	0.007	ND	0.085	0.030	1
1,1,2,2-Tetrachloroethane	ND	0.020	0.007	ND	0.137	0.048	1
o-Xylene	ND	0.020	0.008	ND	0.087	0.035	1
Isopropylbenzene	ND	0.200	0.007	ND	0.983	0.034	1
4-Ethyltoluene	ND	0.020	0.010	ND	0.098	0.049	1
1,3,5-Trimethylbenzene	ND	0.020	0.005	ND	0.098	0.025	1
1,2,4-Trimethylbenzene	ND	0.020	0.007	ND	0.098	0.034	1
Benzyl chloride	ND	0.200	0.037	ND	1.04	0.192	1
1,3-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
1,4-Dichlorobenzene	ND	0.020	0.008	ND	0.120	0.048	1
sec-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
p-Isopropyltoluene	ND	0.200	0.007	ND	1.10	0.038	1



Project Name: BATCH CANISTER CERTIFICATION

Lab Number: L1800504

Project Number: CANISTER QC BAT

Report Date: 02/02/18

Air Canister Certification Results

Lab ID: L1800504-02 Date Collected: 01/08/18 16:00
 Client ID: CAN 561 SHELF 5 Date Received: 01/09/18
 Sample Location: Field Prep: Not Specified
 Sample Depth:

Parameter	ppbV			ug/m3			Dilution Factor
	Results	RL	MDL	Results	RL	MDL	
Volatile Organics in Air by SIM - Mansfield Lab							
1,2-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.036	1
n-Butylbenzene	ND	0.200	0.008	ND	1.10	0.044	1
1,2,4-Trichlorobenzene	ND	0.050	0.010	ND	0.371	0.074	1
Naphthalene	ND	0.050	0.008	ND	0.262	0.042	1
1,2,3-Trichlorobenzene	ND	0.050	0.019	ND	0.371	0.141	1
Hexachlorobutadiene	ND	0.050	0.007	ND	0.533	0.075	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	80		60-140
bromochloromethane	86		60-140
chlorobenzene-d5	82		60-140

AIR Petro Can Certification

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1800091
Report Date: 02/02/18

AIR CAN CERTIFICATION RESULTS

Lab ID:	L1800091-01	Date Collected:	01/02/18 16:00
Client ID:	CAN 2104 SHELF 42	Date Received:	01/03/18
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/03/18 19:28		
Analyst:	MB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1800091
Report Date: 02/02/18

AIR CAN CERTIFICATION RESULTS

Lab ID:	L1800091-02	Date Collected:	01/02/18 16:00
Client ID:	CAN 1787 SHELF 43	Date Received:	01/03/18
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/03/18 20:12		
Analyst:	MB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1800091
Report Date: 02/02/18

AIR CAN CERTIFICATION RESULTS

Lab ID:	L1800091-03	Date Collected:	01/02/18 16:00
Client ID:	CAN 2268 SHELF 46	Date Received:	01/03/18
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/03/18 20:45		
Analyst:	MB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1800402
Report Date: 02/02/18

AIR CAN CERTIFICATION RESULTS

Lab ID:	L1800402-01	Date Collected:	01/05/18 16:00
Client ID:	CAN 393 SHELF 7	Date Received:	01/06/18
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/06/18 18:03		
Analyst:	MB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1800504
Report Date: 02/02/18

AIR CAN CERTIFICATION RESULTS

Lab ID:	L1800504-02	Date Collected:	01/08/18 16:00
Client ID:	CAN 561 SHELF 5	Date Received:	01/09/18
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	01/09/18 16:44		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air						
1,3-Butadiene	ND		ug/m3	0.50	0.50	1
Methyl tert butyl ether	ND		ug/m3	0.70	0.70	1
Benzene	ND		ug/m3	0.60	0.60	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
Toluene	ND		ug/m3	0.90	0.90	1
Ethylbenzene	ND		ug/m3	0.90	0.90	1
p/m-Xylene	ND		ug/m3	0.90	0.90	1
o-Xylene	ND		ug/m3	0.90	0.90	1
Naphthalene	ND		ug/m3	1.1	1.1	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	10	10.	1
C9-C10 Aromatics Total	ND		ug/m3	10	10.	1



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Serial_No:02021816:33
Lab Number: L1801543
Report Date: 02/02/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
NA	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1801543-01A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-02A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-03A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-04A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-05A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-06A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-07A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-08A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-09A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-10A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-11A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-12A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-13A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-14A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-15A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-16A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-17A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-18A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-19A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-20A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-21A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-22A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-23A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1801543-24A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-25A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-26A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-27A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-28A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-29A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-30A	Canister - 6 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-31A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-32A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)
L1801543-33A	Canister - 2.7 Liter	NA	NA			Y	Absent		MCP-TO15-SIM(30),APH-10(30)

*Values in parentheses indicate holding time in days

Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

- Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.
- Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.
- Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.
- Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.
- Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A - Spectra identified as "Aldol Condensation Product".
- B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: DU Report with 'J' Qualifiers



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
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Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedances are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers



Project Name: CUMMINGS BEVERLY
Project Number: CUMMINGS BEVERLY

Lab Number: L1801543
Report Date: 02/02/18

REFERENCES

- 96 Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), MassDEP, December 2009, Revision 1 with QC Requirements & Performance Standards for the Analysis of APH by GC/MS under the Massachusetts Contingency Plan, WSC-CAM-IXA, July 2010.
- 101 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air (EPA/625/R-96/010b:January 1999) with QC Requirements & Performance Standards for the Analysis of TO-15 under the Massachusetts Contingency Plan, WSC-CAM-IXB, July 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**
EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.


**AIR ANALYSIS
CHAIN OF CUSTODY**

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client InformationClient: **FSL Associates**Address: **358 Chestnut Hill Ave****BOSTON, MA**Phone: **(617-232-0001)**

Fax:

Email: **BHoskins@FSLassociates.com** These samples have been previously analyzed by Alpha

Date Due:

PAGE 1 OF 4Date Rec'd in Lab: **1/16/18****ALPHA Job #: L1801543****Project Information**Project Name: **Cummings Beverly**Project Location: **Beverly, MA**

Project #:

Project Manager: **Bruce Hoskins**

ALPHA Quote #:

Turn-Around Time Standard RUSH (only confirmed if pre-approved)

Time:

Report Information - Data Deliverables FAX ADEx

Criteria Checker:

(Default based on Regulatory Criteria Indicated)

Other Formats:

 EMAIL (standard pdf report) Additional Deliverables:

Report to: (if different than Project Manager)

Billing Information Same as Client Info PO #:**Regulatory Requirements/Report Limits**

State/Fed Program Res / Comm

ANALYSIS**All Columns Below Must Be Filled Out**

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION			Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	ID - Flow Controller	TO-15	TO-15 SIM	AP4H	Solvent Non-petroleum HCs	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
01543 - 01	S-171X.2	1/14/18	1022	1008	-24.81	-7.07	IA	KJ	6L	2113 0700	XX						
	02 S-171X.1	1/14/18	1028	1009	-30.71	-16.28	IA	KJ	6L	1666 0729	XX						
	03 S-171X.3	1/14/18	1035	1010	-29.27	-8.80	IA	KJ	6L	1711 0834	XX						
	04 Duplicate -IA-2	1/14/18	1035	1010	-30.10	-7.15	IA	KJ	6L	20680172	XX						
	05 S-1100.3	1/14/18	1059	1020	-29.28	-7.25	IA	KJ	6L	2482 0168	XX						
	06 S-1100.2	1/14/18	1115	1023	-29.44	-10.43	IA	KJ	6L	1514 0989	XX						
	07 S-1100.1	1/14/18	1118	1022	-29.89	-1.63	IA	KJ	6L	611 0268	XX						
	08 SV-1	1/14/18	1138	1158	-24.50	-6.70	SV	KJ	2.7	2450 0044	XX						
	09 SV-11	1/14/18	1326	1350	-26.41	-6.73	SV	KJ	2.7	2311 0093	XX						
	10 SV-8	1/14/18	1500	1529	-31.27	-5.95	SV	KJ	2.7	1747 1007	XX						

AA = Ambient Air (Indoor/Outdoor)

SV = Soil Vapor/Landfill Gas/SVE

Other = Please Specify

Container Type

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

***SAMPLE MATRIX CODES**

Relinquished By:

[Signature]

Date/Time

1/16/18 12:50 PM
1/16/18 12:20 PM

Received By:

[Signature]

Date/Time:

1/16/18 1540
1/16/18 1630


**AIR ANALYSIS
CHAIN OF CUSTODY**

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client InformationClient: *FSL Associates*Address: *358 Chestnut Hill Ave.*Phone: *(617) 232-0001*

Fax:

Email: *BHoskins@FSLassociates.com* These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: **All Columns Below Must Be Filled Out**

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION				Sample Matrix*	Sampler's Initials	Can Size	ID Can	ID - Flow Controller	TO-15	TO-15 SM	API	Fixed Gases	Subtract Non-Methane HCs	Surfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
01543- <i>xx</i> 1	SV-9	1/14/18	1547	1615	-30.51	-7.57	SV	KJ	2.7	486	1008	XX					
<i>xx</i> 12	SV-5	1/14/18	1657	1721	-29.02	-6.66	SV	KJ	2.7	466	0269	XX					
13	Duplicate	1/14/18	1657	1721	-30.35	-5.73	SV	KJ	2.7	1727	1015	XX					
14	SV-2	1/14/18	1332	1302	-6.16	-6.36	SV	CR	2.7	180	1016	XX					
15	SV-13	1/14/18	1340	1400	-30.19	-5.46	SV	CR	2.7	362	1011	XX					
16	SV-12	1/14/18	1412	1442	-30.19	-5.94	SV	CR	2.7	243	0953	XX					
17	SV-10	1/14/18	1509	1539	-29.19	-7.42	SV	CR	2.7	2177	1009	XX					
18	SV-7	1/14/18	1623	1650	-30.43	-6.00	SV	CR	2.7	2077	0113	XX					
19	SV-6	1/14/18	1716	1716	-30.43	-8.05	SV	CR	2.7	486	0625	XX					
20	SV-4	1/14/18	1701	1728	-30.39	-5.08	SV	CR	2.7	1805	0360	XX					

AA = Ambient Air (Indoor/Outdoor)

SV = Soil Vapor/Landfill Gas/SVE

Other = Please Specify

***SAMPLE MATRIX CODES**

Container Type

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:

MGM

Date/Time

1/16/18 12:50 PM
1/14/18 1:30 PM

Received By:

AM
Certified

Date/Time:

1/16/18 1:30
1/16/18 16:30



AIR ANALYSIS

CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: **FSL Associates**
Address: **358 Chestnut Hill Ave**
BOSTON, MA
Phone: **(617-232-0001**
Fax:

Email: **BHoskins@FSLassociates.com**

These samples have been previously analyzed by Alpha

Turn-Around Time

Standard

RUSH (only confirmed if pre-approved)

Date Due:

Time:

PAGE 3 OF 4

Date Rec'd in Lab: 1/16/18

ALPHA Job #: L1801543

Project Information

Project Name: **Cummings Beverly**

Project Location: **Beverly, MA**

Project #:

Project Manager: **Bruce Hoskins**

ALPHA Quote #:

Report Information - Data Deliverables

FAX

ADEx

Criteria Checker:

(Default based on Regulatory Criteria Indicated)

Other Formats:

EMAIL (standard pdf report)

Additional Deliverables:

Report to: (if different than Project Manager)

Billing Information

Same as Client Info

PO #:

Regulatory Requirements/Report Limits

State/Fed

Program

Res / Comm

ANALYSIS

TO-15

TO-15 SIM

AP4

Subtract Non-methane HC's

Fixed Gases

Sulfides & Mercaptans by TO-15

Sample Comments (i.e. PID)

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION				Sample Matrix*	Sampler's Initials	Can Size	ID Can	ID - Flow Controller	TO-15	TO-15 SIM	AP4	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
01543-21	S-149J.1	1/14/18	0840	0838	-30.12	-0.85	IA	KJ	GL	24870315	XX					
	22 S-149J.2	1/14/18	0845	0841	-24.82	-7.47	IA	KJ	GL	9190699	XX					
	23 S-149J.3	1/14/18	0850	0840	-29.76	0.00	IA	KJ	GL	20980089	XX					
	24 S-157J.3	1/14/18	0922	0853	-29.61	-7.12	IA	KJ	GL	21240331	XX					
	25 S-157J.1	1/14/18	0930	0900	-29.18	-12.45	IA	KJ	GL	16400496	XX					
	26 S-157J.2	1/14/18	0933	0857	-30.35	-6.76	IA	KJ	GL	18180762	XX					
	27 S-135L.3	1/14/18	0950	0915	-29.47	-8.91	IA	KJ	GL	16500133	XX					
	28 S-Duplicate-IA-1	1/14/18	0950	0915	-29.50	-7.41	IA	KJ	GL	84400122	XX					
	29 S-135L.2	1/14/18	0954	0916	-29.32	-0.41	IA	KJ	GL	15880560	XX					
	30 S-135C.1	1/14/18	0957	0917	-29.58	-6.97	IA	KJ	GL	7840397	XX					

*SAMPLE MATRIX CODES

AA = Ambient Air (Indoor/Outdoor)

SV = Soil Vapor/Landfill Gas/SVE

Other = Please Specify

Container Type

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:

MGM

Date/Time

1/16/18 12:50

Received By:

MSM AAC

Date/Time:

1/16/18 15:40

